User's Manual

L40 Series

TOSHIBA

Leading Innovation >>>>

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TOSHIBA L40 Series Portable Personal Computer User's Manual

First edition August 2007

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This manual has been validated and reviewed for accuracy. The instructions and descriptions it contains are accurate for the L40 Series Portable Personal Computers at the time of this manual's production. However, succeeding computers and manuals are subject to change without notice. TOSHIBA assumes no liability for damages incurred directly or indirectly from errors, omissions or discrepancies between the computer and the manual.

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EU Declaration of Conformity

C E

This product is carrying the CE-Mark in accordance with the related European Directives. Responsible for CE-Marking is TOSHIBA Europe GmbH, Hammfelddamm 8, 41460 Neuss, Germany.

The complete and official EU Declaration of Conformity can be found on TOSHIBA's web site *http://epps.toshiba-teg.com* on the Internet.

CE compliance

This product is labelled with the CE Mark in accordance with the related European Directives, notably Electromagnetic Compatibility Directive 2004/108/EC for the notebook and the electronic accessories including the supplied power adapter, the Radio Equipment and Telecommunications Terminal Equipment Directive 1999/5/EC in case of implemented telecommunication accessories and the Low Voltage Directive 2006/95/EC for the supplied power adapter.

Портативный   Компьютер

Изготовитель: Toshiba Europe GmbH
Regensburg Operations Center
Адрес: Leibnizstrasse 2, Regensburg, 93055
Germany

Сделано в Китае

РСТ

МЛ03

Following information is only for EU-member states:

The symbol indicates that this product may not be treated as household waste. Ensure this product is properly disposed as inappropriate waste handling of this product may cause potential hazards to the environment and human health.

For more detailed information about recycling of this product, contact your local city office, your household waste disposal service or the shop where you purchased the product.

Optical Disc Drive Safety Instruction

Be sure to check the international precautions at the end of this section.

The optical drive that is used in this computer is equipped with a laser device. A classification label with the following sentence is affixed to the surface of the drive.

CLASS 1 LASER PRODUCT
LASER KLASSE 1
LUOKAN 1 LASERLAITE
APPAREIL A LASER DE CLASSE 1
KLASS 1 LASER APPARAT

The drive with the above label is certified by the manufacturer that the drive complies with the requirement for laser product on the date of manufacturing pursuant to article 21 of Code of Federal Regulations by the United States of America, Department of Health & Human Services, Food and Drug Administration.

In other countries, the drive is certified to comply with the requirement pursuant to IEC 825 and EN60825 on class 1 laser product.

Depending on the model, the computer is equipped with one of the optical drives mentioned on the next pages.
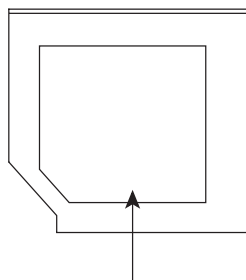
TOSHIBA Samsung Storage Technology Korea Corporation

CD-RW/DVD-ROM TS-L462D

■ *The CD-RW/DVD-ROM drive employs a laser system. To ensure proper use of this product, read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*

■ *Use of controls, adjustments, or procedures other than those specified may result in hazardous radiation exposure.*

■ *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

Location of the required label

SERIAL NO.
MANUFACTURED:

COMPLIES WITH FDA RADIATION PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J.

CLASS 1 LASER PRODUCT
LASER KLASSE 1

TOSHIBA Samsung Storage Technology Korea Corporation
416, Maetan-3Dong, Yeongtong-Gu, Suwon City, Gyeonggi-Do, 443-742, Korea
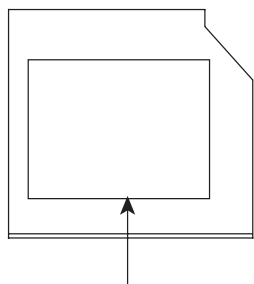
Pioneer

DVD Super Multi DVR-K17

■ *The DVD Super Multi drive employs a laser system. To ensure proper use of this product, read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*

■ *Use of controls, adjustments, or procedures other than those specified may result in hazardous radiation exposure.*

■ *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

Location of the required label

SERIAL NO.
MANUFACTURED:

COMPLIES WITH FDA RADIATION
PERFORMANCE STANDARDS, 21 CFR
SUBCHAPTER J.

CLASS 1 LASER PRODUCT
LASER KLASSE 1

PIONEER CORPORATION
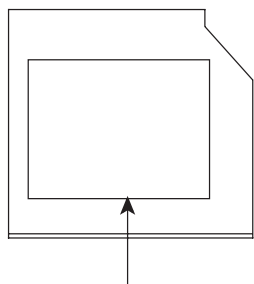4-1, MEGURO 1-CHOME
MEGURO-KU, TOKYO, 153-8654

Hitachi-LG Data Storage, Inc.

DVD Super Multi GSA-T20N

⚠ ■ *The DVD Super Multi drive employs a laser system. To ensure proper use of this product, read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*

■ *Use of controls, adjustments, or procedures other than those specified may result in hazardous radiation exposure.*

■ *To prevent direct exposure to the laser beam, do not try to open the enclosure.*
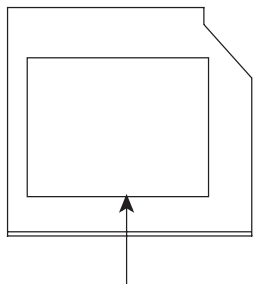
Location of the required label

SERIAL NO.
MANUFACTURED:

COMPLIES WITH FDA RADIATION
PERFORMANCE STANDARDS, 21 CFR
SUBCHAPTER J.

CLASS 1 LASER PRODUCT
LASER KLASSE 1

Hitachi-LG Data Storage, Inc.
22-23, Kaigan 3-chome, Minato-ku,
Yokyo, 108-0022 Japan

Panasonic

CD-RW/DVD-ROM UJDA770

⚠️

■ *The CD-RW/DVD-ROM drive employs a laser system. To ensure proper use of this product, read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*

■ *Use of controls, adjustments, or procedures other than those specified may result in hazardous radiation exposure.*

■ *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

Location of the required label

SERIAL NO.
MANUFACTURED:

COMPLIES WITH FDA RADIATION
PERFORMANCE STANDARDS, 21 CFR
SUBCHAPTER J.

CLASS 1 LASER PRODUCT
LASER KLASSE 1

Panasonic Communications Co., Ltd.
1-62, 4-Chome Minoshima, Hakata-Ku
Fukuoka, Japan

Panasonic

DVD Super Multi UJ-850U

■ *The DVD Super Multi drive employs a laser system. To ensure proper use of this product, read this instruction manual carefully and retain for future reference. Should the unit ever require maintenance, contact an authorized service location.*

■ *Use of controls, adjustments, or procedures other than those specified may result in hazardous radiation exposure.*

■ *To prevent direct exposure to the laser beam, do not try to open the enclosure.*

Location of the required label

SERIAL NO.
MANUFACTURED:

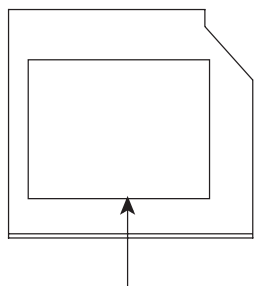COMPLIES WITH FDA RADIATION PERFORMANCE STANDARDS, 21 CFR SUBCHAPTER J.

CLASS 1 LASER PRODUCT
LASER KLASSE 1

Panasonic Communications Co., Ltd.
1-62, 4-Chome Minoshima, Hakata-Ku
Fukuoka, Japan

International Precautions

CLASS 1 LASER PRODUCT
LASER KLASSE 1 PRODUKT
TO EN 60825-1
クラス 1 レーザ製品

CAUTION: This appliance contains a laser system and is classified as a "CLASS 1 LASER PRODUCT." To use this model properly, read the manual carefully and keep it for your future reference. In case of any trouble with this model, contact your nearest **AUTHORIZED service center**.

To prevent direct exposure to the laser beam, do not try to open the enclosure.

CAUTION: USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED IN THE OWNER'S MANUAL MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Modem warning notice

Conformity Statement

The equipment has been approved to [Commission Decision "CTR21"] for pan- European single terminal connection to the Public Switched Telephone Network (PSTN).

However, due to differences between the individual PSTNs provided in different countries/regions the approval does not, of itself, give an unconditional assurance of successful operation on every PSTN network termination point.

In case problems arise, you should contact your equipment supplier immediately.

Network Compatibility Statement

This product is designed to work with, and is compatible with the following networks. It has been tested to and found to confirm with the additional requirements conditional in EG 201 121.

Germany	ATAAB AN005, AN006, AN007, AN009, AN010 and DE03, 04, 05, 08, 09, 12, 14, 17
Greece	ATAAB AN005, AN006 and GR01, 02, 03, 04
Portugal	ATAAB AN001, 005, 006, 007, 011 and P03, 04, 08, 10
Spain	ATAAB AN005, 007, 012, and ES01
Switzerland	ATAAB AN002
Norway	ATAAB AN002, 005, 007 and NO 01, 02
All other countries/regions	ATAAB AN003, 004

Specific switch settings or software setup are required for each network. Refer to the relevant sections of the user guide for more details.

The hookflash (timed break register recall) function is subject to separate national type approvals. It has not been tested for conformity to national type regulations, and no guarantee of successful operation of that specific function on specific national networks can be given.

General Precautions

TOSHIBA computers are designed to optimize safety, minimize strain and withstand the rigors of portability. However, certain precautions should be observed to further reduce the risk of personal injury or damage to thecomputer.

Be certain to read the general precautions below and to note the cautions included in the text of the manual.

Creating a computer-friendly environment

Place the computer on a flat surface that is large enough for the computer and any other items you are using, such as a printer.

Leave enough space around the computer and other equipment to provide adequate ventilation. Otherwise, they may overheat.

To keep your computer in prime operating condition, protect your work area from:

■ Dust, moisture, and direct sunlight.

■ Equipment that generates a strong electromagnetic field, such as stereo speakers (other than speakers that are connected to the computer) or speakerphones.

■ Rapid changes in temperature or humidity and sources of temperature change such as air conditioner vents or heaters.

■ Extreme heat, cold, or humidity.

■ Liquids and corrosive chemicals.

Stress injury

Carefully read the Instruction Manual for Safety and Comfort. It contains information on the prevention of stress injuries to your hands and wrists that can be caused by extensive keyboard use. Chapter 3: *Getting Started*, also includes information on work space design, posture and lighting that can help reduce physical stress.

Heat injury

■ Avoid prolonged physical contact with the computer. If the computer is used for long periods, its surface can become very warm. While the temperature will not feel hot to the touch, if you maintain physical contact with the computer for a long time, for example if you rest the computer on your lap or if you keep your hands on the palm rest, your skin might suffer a low-heat injury.

■ If the computer has been used for a long time, avoid direct contact withthe metal plate supporting the various interface ports as this can become hot.

■ The surface of the AC adaptor can become hot when in use but this condition does not indicate a malfunction. If you need to transport the AC adaptor, you should disconnect it and let it cool before moving it.

■ Do not lay the AC adaptor on a material that is sensitive to heat as the material could become damaged.

Pressure or impact damage

Do not apply heavy pressure to the computer or subject it to any form of strong impact as this can damage the computer's components or otherwise cause it to malfunction.

PC Card overheating

Some PC Cards can become hot during prolonged use which may result in errors or instability in the operation of the device in question. In addition, you should also be careful when you remove a PC Card that has been used for a long time.

Mobile phones

Please be aware that the use of mobile phones can interfere with the audio system. The operation of the computer will not be impaired in any way, but it is recommended that a minimum distance of 30 cm is maintained between the computer and a mobile phone that is in use.

Instruction Manual for Safety and Comfort

All important information on the safe and proper use of this computer is described in the enclosed Instruction Manual for Safety and Comfort. Be sure to read it before using the computer.

Table of Contents

Preface

Congratulations on your purchase of the L40 Series computer! This powerful notebook computer provides excellent expansion capability, including multimedia devices. It is designed to provide years of reliable, high-performance computing.

This manual gives information on setting up and using your L40 Series computer. It also provides detailed information on configuring your computer, basic operations and care, using optional devices and troubleshooting.

If you are a new user of computers or if you are new to portable computing, read the *L40 Series Features* and *The Grand Tour* chapters to familiarize yourself with the computer's features, components and accessory devices. Then read *Getting Started* for step-by-step instructions on setting up your computer.

If you are an experienced computer user, continue reading the preface to learn how this manual is organized, then become acquainted with this manual by browsing through its pages. Be sure to look over the *Special features* section of the *L40 Series Features*, to learn about features that are unique to the computer.

Manual contents

This manual contains information on various components of the computer and how to use them.

Chapter 1, *L40 Series Features*. This chapter identifies the computer's special features, utilities, and options.

Chapter 2, *The Grand Tour*. This chapter identifies the various components of the computer. Become familiar with the components before you operate the computer.

Chapter 3, *Getting Started*. This chapter provides the basic information to get you started on using the computer.

Chapter 4, *Basic Operations*. This chapter provides information on using the computer's components.

Chapter 5, *The Keyboard*. This chapter describes special keyboard functions including the keypad overlay and hotkeys.

Chapter 6, *Power and Power-Up Modes*. This chapter gives details on the computer's power resources.

Chapter 7, *Optional Devices*. This chapter describes the optional hardware available.

Chapter 8, *Troubleshooting*. This chapter provides probable solutions to problems that you may encounter in using the computer.

Chapter 9, *Disclaimers*. This chapter provides Disclaimer(s) information applicable to the computer.

The *Appendices* provides additional information that you may use as reference.

The *Glossary* defines general computer terminology and includes a list of acronyms used in the text.

Conventions

This manual uses the following formats to describe, identify, and highlight terms and operating procedures.

Abbreviations

On first appearance, and whenever necessary for clarity, abbreviations are enclosed in parentheses following their definition. For example: Read Only Memory (ROM). Acronyms are also defined in the *Glossary*.

Icons

Icons identify ports, dials, and other parts of your computer. The indicator panel also uses icons to identify the components it is providing information on.

Keys

The keyboard keys are used in the text to describe many computer operations. A distinctive typeface identifies the key top symbols as they appear on the keyboard. For example, **Enter** identifies the Enter key.

Key operation

Some operations require you to simultaneously use two or more keys. We identify such operations by the key top symbols separated by a plus sign (**+**). For example, **Ctrl** + **C** means you must hold down **Ctrl** and at the same time press **C**. If three keys are used, hold down the first two and at the same time press the third.

DISKCOPY A: B: When procedures require an action such as clicking an icon or entering text, the icon's name or the text you are to type in is represented in the type face you see to the left.

Display

Names of windows or icons or text generated by the computer that appears on its display screen is presented in the type face you see to the left.

ABC

Messages

Messages are used in this manual to bring important information to your attention. Each type of message is identified as shown below.

> ⚠ **WARNING/CAUTION:** *Information to prevent injury to yourself, or to prevent damage to components when trying to complete a task.*

> ⓘ **NOTE:** *Instructions that you MUST follow to complete a task.*

Terminology

This term is defined in this document as follows:

Start	The word "Start" refers to the 🏵 button in Microsoft® Windows Vista®.

Equipment checklist

Carefully unpack your computer. Save the box and packing materials for future use. Check to make sure you have all the following items:

Hardware

- L40 Series Portable Personal Computer
- Universal AC Adapter and Power Cord
- Modular cable for modem (provided with some models)

Software

The following Windows operating system and utility software are preinstalled.

- Microsoft® Windows Vista®
- TOSHIBA DVD Player
- TOSHIBA ConfigFree
- TOSHIBA Assist
- TOSHIBA Disc Creator
- TOSHIBA CD/DVD Drive Acoustic Silencer
- Ulead DVD MovieFactory® for TOSHIBA
- TOSHIBA SD Memory Utilities
- TOSHIBA Accessibility
- Online Manual

The system may not function properly if you use drivers that are not preinstalled or distributed by TOSHIBA.

SD Memory Card Format Utility and other SD functions are packaged into TOSHIBA SD Memory Utilities. When uninstalling the SD utilities, click **Start** → **Control Panel** → **Uninstall** *a program, and select* **TOSHIBA SD Memory Utilities***.*

Documentation and Backup Media

- Your computer's documentation:
    - L40 Series Personal Computer User's Manual
    - L40 Series Quickstart
    - Instruction Manual for Safety and Comfort
    - Microsoft® Windows Vista® Quick Start Guide
    - Warranty Information
    - Product Recovery DVD-ROM (provided with some models)

If any of the items are missing or damaged, contact your dealer immediately.

Chapter 1

L40 Series Features

This chapter identifies the computer's special features, options, and accessories.

Basic features are described in a separate pamphlet.

Some of the features described in this manual may not function properly if you use an operating system that was not preinstalled by TOSHIBA.

Features

For the configuration details on your purchased model, visit your region's TOSHIBA website.

Processor

Depending on the model:

Visit your region's TOSHIBA website for the configuration details of the model that you have purchased.

Disclaimer (CPU)

For more details about the CPU disclaimer, refer to the *Disclaimers* section in Chapter 9.

Chipset

- Mobile Intel® GL960 Express Chipset
- Realtek ALC660-VD-GR
- RICOH R5C847 for Multiple Digital Media Card Slot.
- Realtek 8100CL for 10/100Mbps LAN controller

Main Memory

The graphics system in your computer may use part of the main system memory for graphics performance and may reduce the amount of system memory available for other computing activities. The amount of system memory allocated to support graphics may vary depending on the graphics system, applications utilized, system memory size and other factors.

- 2 × SODIMM socket for expansion up to 2GB (Two pieces 1GB)
- SODIMM Capacity: 512MB, 1024MB, 2048MB
- Dual channel support

BIOS

- 1024KB Flash ROM for system BIOS
- Suspend to memory or hard disk drive
- Hardware password protection
- Various Hotkey functions for system control
- Complete ACPI 2.0 functionality

Power

Battery Pack	6-cell Lithium Ion smart battery pack with 43.2 Wh capacity (10.8V/4000mAH)
	Approximately 12 hours or longer charging time to 100% battery capacity with system switched on.
	Approximately 4 hours charge time to 100% battery capacity with system switched off.
	Approximately 2 days discharging time in Sleep mode for the 6-cell battery.
	Discharge time in shutdown mode is approximately one (1) month.

Disclaimer (Battery Life)

For more information on the Disclaimer about Battery Life, refer to the *Disclaimers* section in Chapter 9.

RTC Battery	The computer has an internal battery to back up its Real Time Clock (RTC), calendar, and setup information. This battery will last for at least one month without external power source.

AC adapter	The universal AC adapter provides power to the system and recharges the batteries when they are low. It comes with a detachable power cord.

TouchPad

	A TouchPad and control buttons in the palm rest enable control of the on-screen pointer.

Display (LCD)

	15.4" WXGA TFT screen with a resolution of 1280 horizontal × 800 vertical pixels

Disclaimer (LCD)

For more information on the Disclaimer about LCD, refer to the *Disclaimers* section in Chapter 9.

Graphics controller	Mobile Intel® GL960 Express Chips Embedded graphics controller
	The graphics controller maximizes display performance. Refer to *Display Modes* section in Appendix B for more information.

Disclaimer (Graphics Processor Unit ("GPU")

For more information on the Disclaimer regarding Graphic Processor Unit ("GPU"), refer to the *Disclaimers* section in Chapter 9.

Disks

Fixed hard disk	Depending on the model purchased, one of the following drives will be installed:
	60.0 billion bytes (55.88GB)
	80.0 billion bytes (74.51GB)
	120.0 billion bytes (111.76GB)
	160.0 billion bytes (149.01GB)
	9.5mm/2.5" hard disk drive support

Disclaimer (HDD Drive Capacity)

For more information on the Disclaimer regarding HDD Drive Capacity, refer to the *Disclaimers* section in Chapter 9.

CD-RW/DVD-ROM drive	Some models are equipped with a full-size CDRW/DVD-ROM module that lets you record data to rewritable CD/CD-RWs as well as run either 12cm (4.72") or 8cm (3.15") CD/DVDs without using an adapter. It reads DVD-ROMs at maximum 8 speed and CD-ROMs at maximum 24 speed. It writes CD-Rs at up to 24 speed, CDRWs at up to 24 speed. This drive supports the following formats:

■ DVD-ROM   ■ DVD-Video

■ CD-R   ■ CD-RW

■ CD-DA   ■ CD-Text

■ Photo CD (single/multi-session)

■ CD-ROM Mode1, Mode2

■ CD-ROMXA Mode2 (Form1, Form2)

■ Enhanced CD (CD-EXTRA)

DVD Super Multi drive with double layer disc recording support	Some models are equipped with a full-size DVD Super Multi drive module with double layer support that lets you record data to rewritable CD/DVDs as well as run either 12cm (4.72") or 8cm (3.15") CD/DVDs without using an adapter. It reads DVD-ROMs at maximum 8 speed and CDROMs at maximum 24 speed. It writes CD-Rs at up to 24 speed, CD-RWs at up to 16 speed, DVDRs at maximum 8 speed, DVD-RWs at maximum 6 speed, DVD+RWs at maximum 8 speed, DVD+Rs at maximum 8 speed, DVD+R (double layer) at maximum 4 speed, DVD-R (dual layer) at maximum 4 speed, and DVD-RAM at maximum 5 speed. This drive supports the same formats as the CD-RW/DVD-ROM drive plus the following:

- DVD-ROM
- DVD-Video
- DVD-R
- DVD-RW
- DVD+R
- DVD+RW
- DVD-RAM
- DVD+R (double layer)
- DVD-R (dual layer)
- CD-R
- CD-RW
- CD-DA
- CD-Text
- Photo CD (single/multi-session)
- CD-ROM Mode1, Mode2
- CD-ROMXA Mode2 (Form1, Form2)
- Enhanced CD (CD-EXTRA)

Computers in this series can be configured with multiple types of optical disc drive. For more information on the optical disc drives available, talk to your dealer.

Slots (depending on configuration)

Express Card	
Multiple Digital Media Card Reader (SD/ SDHC/MMC/MS/ MS Pro/xD)	Lets you easily transfer data from five different types of common multimedia memory card used in a variety of devices, such as PDAs and digital cameras.

Ports

External monitor	15-pin analog VGA port supports VESA DDC2B compatible functions.
Universal Serial Bus	The computer has 3 Universal Serial Bus (USB) ports that comply with the USB 2.0 standard, which enables data transfer speeds more than 40 times faster than USB 1.1 (which this computer also supports).

Multimedia

Sound system	The integrated Windows compatible sound system provides support for internal speakers as well as jacks for external microphones and headphones.
Headphone jack	A standard 3.5mm stereo jack for connecting to external headphones or speakers.
Microphone jack	A standard 3.5mm mini microphone jack enables connection of monaural microphone input.

Communications (depending on configuration)

Modem	Some computers in this series are equipped with Modem functionality.
	The internal modem provides capability for data and fax communication. It supports the V.90 or V.92 standards depending on the region and provides a modem jack for connection to a telephone line. The speed of data and fax transfer depends on the analog telephone line conditions.
LAN	The computer has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 Mbps 100BASE-TX).
Wireless LAN	Some computers in this series are equipped with a wireless LAN mini Card that is compatible with other systems that support the 802.11 b/g and the 802.11 a/b/g wireless communications standards. It offers frequency selection between 2.4GHz or 5GHz and allows roaming over multiple channels.

Security

	Power-on password protection
	Two level password architecture

Security Lock Slot

	Receives an optional security lock in order to anchor the computer to a desk or other large, heavy object.

Special features

Hotkeys	Key combinations that let you quickly modify the system configuration directly from the keyboard without running a system configuration program.
Display Automatic Power off	This feature automatically turns off the internal display when there is no input from the keyboard or pointing device for a specified time. Power is restored when any key is pressed or when there is input from a pointing device. You can specify the time in the **Power Options**.
Hard Disk Drive Automatic Power Off	This feature automatically turns off the hard disk drive when it is not accessed for a specified time. Power is restored when the hard disk is accessed. You can specify the time in the **Power Options**.
System Automatic Sleep/Hibernation	This feature automatically places the system into either Sleep Mode or Hibernation Mode when there is no input or hardware access for a specified time. You can specify the time and select either System Sleep or System Hibernate in the **Power Options**.
Keypad Overlay	A ten-key pad is integrated into the keyboard.
Power-on Password	There are levels of password security: **Supervisor** and **User**. These security levels can prevent unauthorized access to your computer.
Battery Save Mode	This feature lets you save the battery's power. You can specify the level of system power management in the **Power Options**.
Instant Security	A specific hot key function locks the system ensuring data security.

Panel Power Off/On	This feature turns off the computer when the display panel is closed and turns it back on when the panel is opened. You can specify the setting in the **Power Options**.
Low Battery Automatic Hibernation	When battery power is exhausted to the point that computer operation cannot be continued, the system automatically enters Hibernation Mode and shuts itself down. You can specify the setting in the **Power Options**.
Hibernation	This feature lets you turn off your computer without exiting from your software. The contents of the main memory are saved to the hard disk. When you turn on your computer again, you can continue working right where you left off.
Sleep	In Sleep Mode, the system's power remains on, but the processor and all other devices are effectively in 'sleep mode'. When the computer is in Sleep Mode, the Power LED flashes amber. The computer enters Sleep Mode regardless of the Hibernate Mode setting.

- *Before entering Sleep mode, make sure to save your data.*
- *Do not install or remove a memory module while the computer is in Sleep mode. The computer or the module could be damaged.*
- *Do not remove the battery pack while the computer is in Sleep mode. Data in memory will be lost.*

Utilities and Applications

This section describes pre-installed utilities and tells how to start them. For details on operations, refer to each utility's online manual, help files, or readme.txt files.

TOSHIBA Assist	This is a graphical user interface that provides easy access to help and services.
TOSHIBA DVD Player	This is used to play DVD Video media through an on-screen interface and functions.

Frame dropping, audio skipping, or out-of-synch audio and video may occur during playback of some DVD Video titles. Make sure to connect the computer's AC adapter when playing a DVD video. Power-saving features may interfere with smooth playback.

TOSHIBA ConfigFree	This is a suite of utilities to allow easy control of communication devices and network connections. ConfigFree also allows you to find communication problems and create profiles for easy switching between location and communication networks. To start ConfigFree, click **Start → All Programs → TOSHIBA → Networking → ConfigFree**.
TOSHIBA Disc Creator	You can create discs in several formats including audio CDs that can be played on a standard stereo CD player and data discs to store the files and folders on your hard disk drive. This software can be used on a model with a CD-RW/DVD-ROM drive or a DVD Super Multi drive.
CD/DVD Drive Acoustic Silencer	This utility allows you to configure the read speed of optical drive. You can either configure Normal Mode, which operates the drive at its maximum speed for quick data access, or Quiet Mode, which runs at single speed for CD audio and which can lessen operational noise. It is ineffective in DVD.
Ulead DVD MovieFactory® for TOSHIBA (depending on configuration)	You can edit a digital video and make a Video-DVD.
Windows Mobility Center	Mobility Center is a utility for accessing several mobile PC settings quickly in one window. A default maximum of eight tiles are provided by the operating system, and the additional two tiles are added to your Mobility Center. ■ Lock Computer: This can be used to lock your computer without turning it off. This has the same function as the Lock button at the bottom of the right pane in the start menu. ■ TOSHIBA Assist: This can be used to open **TOSHIBA Assist** if it is already installed in your computer.

Options

You can add a number of options to make your computer even more powerful and convenient to use. The following options are available:

Memory Modules	Two memory module can be installed in this computer.

Use only PC5300* compatible DDRII memory modules. See your TOSHIBA dealer for details.

* The availability of DDRII depends on the model you purchased.

Battery Pack	An additional battery pack can be purchased from your TOSHIBA dealer. Use it as a spare or a replacement.
AC adapter	If you use your computer at more than one site frequently, it may be convenient to purchase an additional AC adapter for each site so you will not have to carry the adapter with you.
USB Floppy Disk Drive	Lets you attach a floppy disk drive to your computer by means of a USB cable.

Chapter 2

The Grand Tour

This chapter identifies the various components of your computer. Become familiar with each component before you operate the computer.

Certain types of notebook chassis are designed to accommodate all possible configurations for an entire product series. Your selected model may not have all the features and specifications corresponding to all of the icons or switches shown on the notebook chassis, unless you have selected all those features.

Front with the display closed

The following figure shows the computer front with its display panel in the closed position.
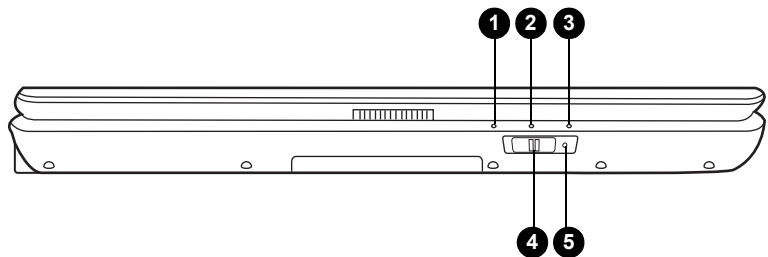
1. Power LED
2. Battery LED
3. Hard Disk Drive LED
4. Wireless Communication Switch*
5. Wireless Communication LED*

* The availability of this feature is dependent on the model you purchased.

Power LED	In normal operating mode, the Power LED is green. If the system is in Sleep Mode the LED will flash amber, while the LED will be off when the computer is turned off or is in Hibernation Mode.

	Battery LED	The Battery LED indicates the battery's current charge/discharge status. It lights green when the battery is fully charged. It lights amber while the battery is being charged from the AC adapter. It flashes amber when the battery capacity is low.
	Hard Disk Drive LED	The Hard Disk Drive LED indicates that the hard disk drive is being accessed. Every time your computer runs a program, opens a file, or performs some other function in which it must access the hard disk drive, this light will go on.
	Wireless Communication Switch*	The wireless communication switch turns on the wireless networking transceiver. The Wireless Communication LED beside it indicates that wireless networking is turned on.
	Wireless Communication LED*	Indicates whether the wireless LAN is active or not.

Right side

The following figure shows the computer's right side.
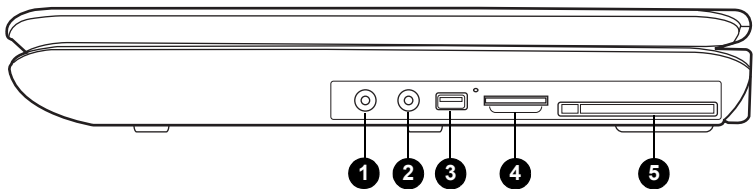
1. Headphone Jack
2. Microphone Jack
3. USB Port

4. Multiple Digital Media Card Slot Access LED* and Multiple Digital Media Card Slot*
5. Express Card Slot

* The availability of this feature is dependent on the model you purchased.

	Headphone Jack	The headphone jack lets you connect stereo headphones or other audio-output devices such as external speakers. Connecting headphones or other devices to this jack automatically disables the internal speakers.
	Microphone Jack	The standard 3.5 mm mini microphone jack enables connection of a three conductive type mini-jack for a monaural microphone.
	Universal Serial Bus (USB) Port	The Universal Serial Bus (USB 2.0 and 1.1 compatible) ports enable USB-equipped devices such as keyboards, mice, hard drives, scanners, and printers to be connected to the computer.
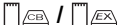
	Multiple Digital Media Card Slot Access LED	The Multiple Digital Media Card Slot Access LED illuminates when the card in the slot is in use.
🔲 ⬟ *xD*	**Multiple Digital Media Card Slot**	The Multiple Digital Media Card Slot allows you to use media cards from digital still cameras and other various forms of portable information equipment.

> *The green LED near the media card reader connector flashes when the system accesses the media card.*

🔲 / 🔲	**Express Card Slot**	The Express card allows you to install an additional Express Card.

Left side

The following figure shows the computer's left side.

1. Optical Disc Drive	2. Optical Disc Drive LED

Optical Disc Drive	The computer is configured with a full-size optical disc drive module that lets you run either 12cm (4.72") or 8cm (3.15") discs without using an adapter. See the Drives section in this chapter for technical specifications on each drive and Chapter 4: *Basic Operations*, for information on using the drive and caring for discs.
Optical Disc Drive LED	This indicator lets you know when the Optical Disc drive is being accessed.

Back side

The following figure shows the computer's back panel.

1. RGB (Monitor) Port
2. USB Ports
3. LAN Jack

4. Modem Jack*
5. DC-In 19V Jack
6. Fan vents
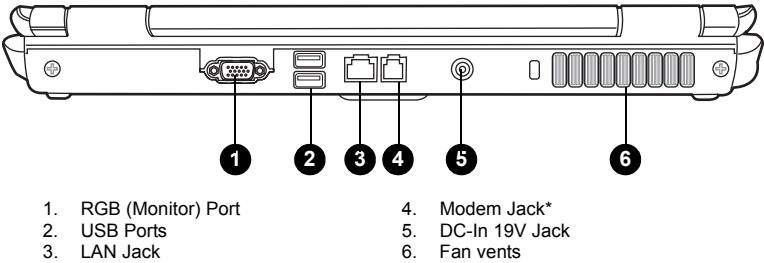
* The availability of this feature is dependent on the model you purchased.

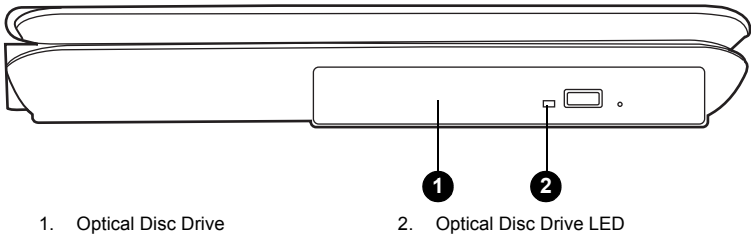|		
	RGB Monitor Port	This 15-pin port lets you connect an external video display to the computer.
	Universal Serial Bus (USB) Port	The Universal Serial Bus (USB 2.0 and 1.1 compatible) port enables USB-equipped devices such as keyboards, mice, hard drives, scanners, and printers to be connected to the computer.
	LAN Jack	This jack lets you connect to a LAN. The adapter has built-in support for Ethernet LAN (10 megabits per second, 10BASE-T), Fast Ethernet LAN (100 megabits per second, 100BASE-TX).
	Modem Jack	In regions where an internal modem is installed as standard equipment, this jack lets you use a modular cable to connect the modem directly to a telephone line.
DC IN 19V	**DC IN 19V Jack**	The DC IN jack is where you plug in the AC adapter.
	Fan vents	The fan vents help prevent the CPU from overheating
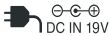
To prevent possible over heating of the CPU, never block the fan vent.

Underside

The following figure shows the computer's underside.
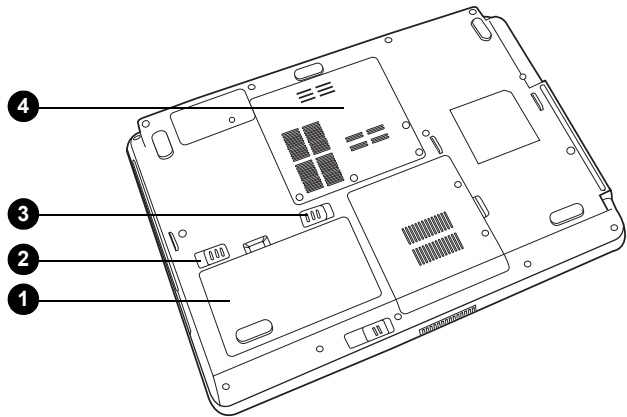
1. Battery Pack
2. Battery Pack Lock
3. Battery Pack Latch
4. Expansion Memory Socket

	Battery Pack	The battery pack powers the computer when the AC adapter is not connected. For detailed information on the battery pack, refer to Chapter 6, *Power and Power-Up Modes*.
① ▭→🔒	**Battery Pack Lock**	When you slide this into its locked position, the battery pack cannot be released even if you attempt to slide the battery pack latch into its open position.
② ←▭	**Battery Pack Latch**	With the Battery Pack Lock in its unlocked position, you can slide this latch in order to remove the battery pack.
▯	**Expansion Memory Socket**	Use this socket to install a memory module to increase your computer's memory. Refer to the *Memory expansion* section in Chapter 7: *Optional Devices*.

Front with the display open

The following figure shows the front of the computer with the display open. To open the display, slide the latch on the front of the display and lift it up. Position the display at a comfortable viewing angle.

1. Display Screen
2. Keyboard Status Indicators
3. Power Button
4. Keyboard
5. TouchPad
6. Left and Right Speakers
7. TouchPad Control Buttons
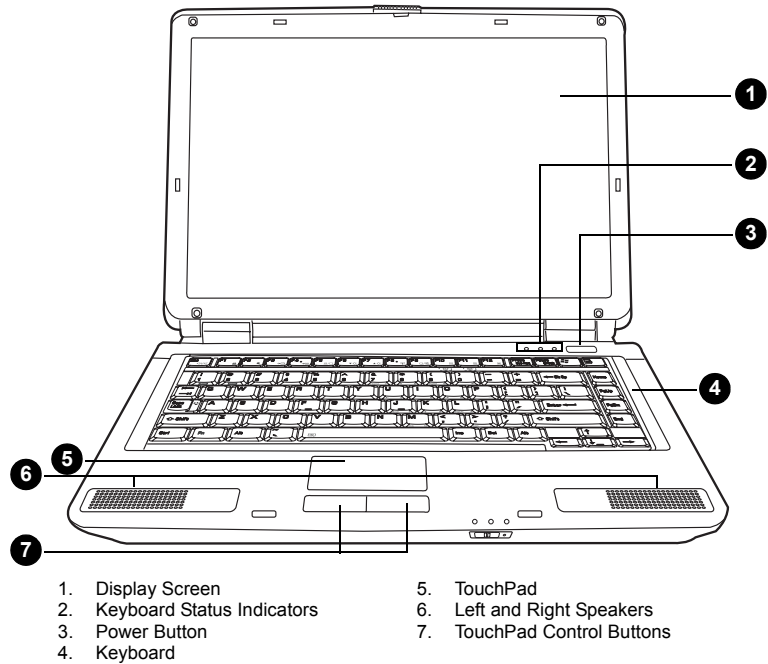
Display Screen	The LCD displays high-contrast text and graphics at a resolution up to 1280 × 800 pixels. Refer to Appendix B, *Display Modes* for further information. When the computer operates from the AC adapter, the display screen's image will be somewhat brighter than when it operates on battery power - this is normal and is designed to conserve battery power.

To prolong the life of your display screen, use a screensaver when you are not using the computer and it is idle.

Power Button	Press the power button to turn the computer's power on and off. There is a LED inside the power button which shines green when the system is on.

Keyboard	The keyboard provides full-sized keys with comfortable travel (depth at which the keys can be depressed) and palm rest for both hands. Two Windows function keys are provided in the Windows operating system.
TouchPad	The TouchPad pointing device is located in the center of the palm rest and is used to control the on-screen pointer. Refer to the Using the TouchPad section in Chapter 4: *Basic Operations*.
Left and Right Speakers	The computer provides two speakers for stereo sound reproduction.
TouchPad Control Buttons	Control buttons below the TouchPad let you select menu items or manipulate text and graphics designated by the on-screen pointer.

Keyboard Indicators

CAPS LOCK MODE   NUMERIC MODE   SCROLL LOCK MODE
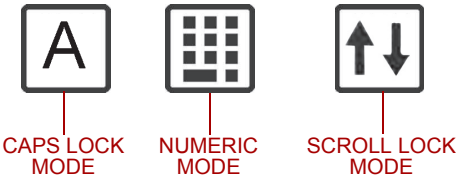
	Caps Lock Mode	The Caps Lock mode icon lights when you press the Caps Lock key. When this light is on, pressing a letter key on the keyboard produces an uppercase (capital) letter.
	Numeric Mode	You can use the keypad overlay (light gray labeled keys) for numeric input when the Numeric mode icon lights green. Refer to the Keyboard overlay section in Chapter 5: *The Keyboard*.
	Scroll Lock Mode	When the Scroll Lock mode icon lights green, you can use the Scroll Lock mode. In Scroll Lock mode, the arrow keys can scroll the contents in the window instead of moving the cursor, depending on the application.

Optical Disc drive

Depending on its configuration, the computer will either have a CD-RW/ DVD-ROM drive or a double layer DVD Super Multi drive. An ATAPI interface controller is used for the operation of these optical drives. When the computer is accessing a disc, an indicator on the drive glows.

Region codes for DVD drives and media

The disc drive and its media are manufactured according to the specifications of six marketing regions. When you purchase DVD-Video, make sure it matches your drive, otherwise it will not play properly.

Code	Region
1	Canada, United States
2	Japan, Europe, South Africa, Middle East
3	Southeast Asia, East Asia
4	Australia, New Zealand, Pacific Islands, Central America, South America, Caribbean
5	Russia, Indian Subcontinent, Africa, North Korea, Mongolia
6	China

Writable discs

This section describes the types of writable discs. Check the specifications for your drive to for the type of discs it can write. Use **Record Now!** to write compact discs. Refer to Chapter 4: *Basic Operations*.

CDs

■ CD-R discs can be written only once. The recorded data cannot be erased or changed.

■ CD-RW discs can be recorded more than once. Use either 1x, 2x, or 4x multi-speed CD-RW discs or high-speed 4x to 10x discs. The write speed of ultra-speed CD-RW discs is a maximum of 24x speed.

DVDs

■ DVD-R and DVD+R discs can be written only once. The recorded data cannot be erased or changed.

■ DVD-RW, DVD+RW and DVD-RAM discs can be recorded more than once.

CD-RW/DVD-ROM drive

The full-size CD-RW/DVD-ROM drive module lets you record data to rewritable CDs as well as run either 12cm (4.72") or 8cm (3.15") discs without using an adapter.

The read speed is slower at the center of a disc and faster at the other edge.

DVD read	*8 speed (maximum)*
CD read	*24 speed (maximum)*
CD-R write	*24 speed (maximum)*
CD-RW write	*24 speed (maximum, ultra-speed media)*

DVD Super Multi drive with double layer disc recording support

The full-size DVD super multi drive module lets you record data to rewritable discs as well as run either 12cm (4.72") or 8cm (3.15") discs without using an adapter.

The read speed is slower at the centre of a disc and faster at the outer edge.

DVD read	*8 speed (maximum)*
DVD-R write	*8 speed (maximum)*
DVD-RW write	*6 speed (maximum)*
DVD+R write	*8 speed (maximum)*
DVD+RW write	*8 speed (maximum)*
DVD-RAM write	*5 speed (maximum)*
CD read	*24 speed (maximum)*
CD-R write	*24 speed (maximum)*
CD-RW write	*16 speed (maximum, ultra-speed media)*
DVD+R (DL) write	*4 speed (maximum)*
DVD-R(DL) write	*4 speed (maximum)*

This drive cannot use discs that allow writing faster than 8x speed or faster (DVD-R, DVD+R with Single Layer, and DVD+RW), 6x speed or faster (DVD-RW), 5x speed (DVD-RAM) and Ultra-speed+ (CD-RW).

AC adapter

The AC adapter converts AC power to DC power and reduces the voltage supplied to the computer. It can automatically adjust to any voltage from 100 to 240 volts and to a frequency of either 50 or 60 hertz, enabling you to use the computer in almost any country/region.

To recharge the battery, simply connect the AC adapter to a power source and the computer. For more details, see Chapter 6: *Power and Power-Up Modes*.
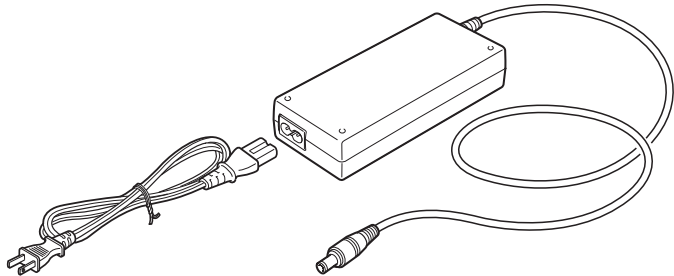
⚠️ *Use ONLY the AC Adapter supplied with the computer's package or an AC adapter certified by TOSHIBA.*

Using the wrong adapter could damage your computer. TOSHIBA assumes no liability for any damage in such case. The output rating for the computer is 19 volts DC.

Chapter 3

Getting Started

Before you attempt to use your computer, make sure to read the **Instruction Manual for Safety and Comfort** *included in the package.*

The **Instruction Manual for Safety and Comfort** *provides you with instructions to safely and fully use your computer.*

This chapter provides basic information to get you started using your computer. It covers the following topics:

■ Connecting the AC adapter

■ Opening the display

■ Turning on the power

■ Starting up for the first time

■ Turning off the power

■ Restarting the computer

■ Restoring the preinstalled software from the Product Recovery disc (provided with some models).

All users should be sure to carefully read the section Starting up for the first time, *which describes the actions to take when you first turn on the power to the computer.*

Connecting the AC adapter

Attach the AC adapter when you need to charge the battery or you want to operate from AC power. It is also the fastest way to get started, because the battery pack will need to be charged before you can operate from battery power. The AC adapter can be connected to any power source supplying from 100 to 240 volts and 50 or 60 hertz. For details on using the AC adapter to charge the battery pack, refer to Chapter 6: *Power and Power-Up Modes*.

> ⚠ *Use ONLY the AC Adapter supplied with the computer's package or an AC adapter certified by TOSHIBA.*
>
> *Using the wrong adapter could damage your computer. TOSHIBA assumes no liability for any damage in such case. The output rating for the computer is 19 volts DC.*

1. Connect the power cord to the AC adapter.
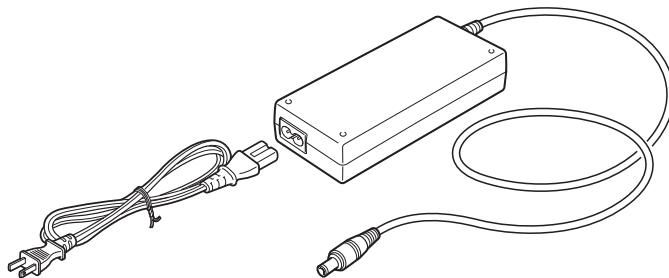
2. Connect the DC output plug on the AC adapter to the DC IN input port on the back of the computer.
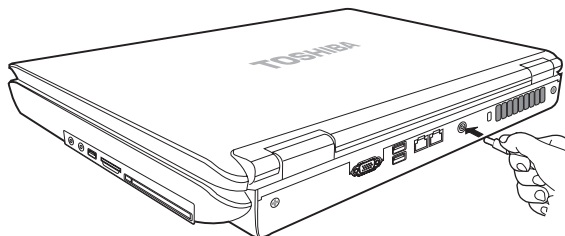
3. Plug the power cord into a live wall outlet. The **Battery** and **DC IN** indicators on the front of the computer should glow.

Opening the display

The display panel can be rotated in a wide range of angles for optimal viewing.

1. Slide the display latch on the front of the computer.

2. Lift the panel up and adjust it to the best viewing angle for you.

> *Use reasonable care when opening and closing the display panel. Opening it vigorously or slamming it shut could damage the computer.*

Turning on the power

This section describes how to turn on the power.

> *After you turn on the power for the first time, do not turn it off until you have set up the operating system. Refer to the section Starting up for the first time in this chapter.*

1. If a USB floppy disk drive is connected, make sure the drive is empty - if a disk is in the drive, press the eject button to remove it.
2. Open the display panel.
3. Press the computer's power button and then release it.
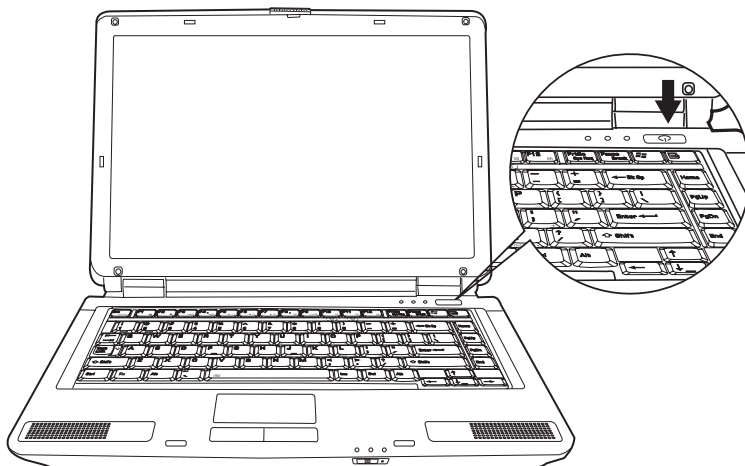
Starting up for the first time

When you first turn on the power, the computer's initial screen is the Windows Vista® Startup Screen Logo. Follow the on-screen directions for each screen. During setup, you can click the Back button to return to the previous screen.

Be sure to read the Windows Operating System End User License Agreement carefully.

Turning off the power

The power can be turned off in either of these three modes: **Shutdown (Boot) Mode**, **Hibernation Mode**, or **Sleep Mode**.

Shut Down mode (Boot mode)

When you turn off the power in Shut Down mode no data will be saved and the computer will boot to the operating system's main screen the next time it is turned on.

1. If you have entered data, either save it to the hard disk, drive or to other storage media.
2. Make sure all disk/disks activity has stopped before removing the CD/DVD or floppy diskette.

- *Make sure the **Hard Disk Drive** indicators is off. If you turn off the power while a disk (disks) is being accessed, you can lose data or damage the disk.*
- *Never turn off the power while an application is running. Doing so could cause loss data.*
- *Never turn off the power, disconnect an external storage device or remove storage media during data read/write. Doing so can cause data loss.*

3. Click **Start** then click the arrow button (▶) located in the power management buttons (⏻ 🔒 ▶) and select **Shut Down** from the menu.
4. Turn off any peripheral devices connected to your computer.

Do not turn the computer or peripheral devices back on immediately. Wait a short period to avoid and peripheral damage.

Sleep Mode

Setting the computer in Sleep Mode enables you to turn off the power without exiting from your software. In this mode, data is maintained in the computer's main memory so that, when you turn on the power again, you can continue working right where you left off.

- *When the AC adapter is connected, the computer will go into Sleep Mode according to the settings in the Power Options.*

- *To restore the operation from the computer from Sleep Mode, press the power button or press any key.*

- *If the computer enters Sleep Mode while a network application is active, the application might not be restored when the computer is next turned on and the system returns from Sleep Mode.*

- *To prevent the computer from automatically entering Sleep Mode, disable Sleep Mode within the Power Options. However, this configuration will nullify the computer's Energy Star compliance.*

- *Before entering Sleep Mode, be sure to save your data.*

- *Do not install or remove a memory module while the computer is in Sleep Mode. The Computer or the module could be damaged.*

- *Do not remove the battery pack while the computer is in Sleep Mode, unless the computer is connected to an AC power source. Data in memory will be lost.*

Benefits of Sleep Mode

The Sleep Mode feature provides the following benefits:

- Restore the previous working enviroment more rapidly than does the Hibernation Mode feature.

- Saves power by shutting down the system when the computer receives no input or hardware access for the time period set by the System Sleep Mode feature.

- Allows the use of the panel power off feature.

Executing Sleep Mode

You can enter also Sleep Mode by pressing **Fn** + **F3***. Refer to Chapter 5, The Keyboard for more details.*

You can enter Sleep Mode in one of three ways:

1. Click **Start** then click the Sleep button ( ) located in the power management buttons ( ), or click the arrow button ( ) and select Sleep from the menu.

2. Close the computer's LCD display panel. Please note that this feature must be enabled. To enable it, click **Start → Control Panel → System and Maintenance → Power Options**.

3. Press the power button. This feature must be enabled. To enable it, click **Start → Control Panel → System and Maintenance → Power Options → Choose what the power button do**.

When you turn the power back on, you can continue where you left when you shutdown the computer.

- *When the computer is in Sleep Mode, the power indicator will blink orange.*
- *If you are operating the computer on battery power, you can lengthen the overall operating time by turning it off into Hibernation Mode - Sleep Mode will consume more power while the computer is off.*

Sleep Mode limitations

Sleep Mode will not working under the following conditions:

- Power is turned back on immediately after shutting down.
- Memory circuits are exposed to static electricity or electrical noise.

Hibernation mode

The Hibernation Mode feature saves the contents of memory to the hard disk drive when the computer is turned off so that, the next time it is turned on, the previous state is restored. The Hibernation Mode feature does not save the status of any peripheral devices connected to the computer.

- *Save your data. While entering Hibernation Mode, the computer saves the contents of memory to the hard disk drive. However, for safety sake, it is best to save your data manually.*
- *Data will be lost if you remove the battery or disconnect the AC adapter before the data has been completely saved. Wait for the Hard Disk Drive indicator to go out.*
- *Do not install or remove a memory module while the computer is in Hibernation Mode. Data will be lost.*

Benefits of Hibernation Mode

The Hibernation Mode feature provides the following benefits:

- Saves data to the hard disk drive when the computer automatically shut down because of a low battery condition.
- You can return to your previous working environment immediately when you turn on the computer.
- Saves power by shutting down the system when the computer receives no input or hardware access for the time period set by the System Hibernate feature.
- Allows the use of the panel power off feature.

Starting Hibernation Mode

You can also enable Hibernation Mode by pressing **Fn** + **F4**. *Refer to Chapter 5,* The Keyboard *for more details*.

To enter Hibernation Mode, follow the steps below.

1. Click **Start** then click the arrow button (▶) in the power management buttons (⟨ ⏻   🔒 ▶ ⟩).
2. Select **Hibernate** from the menu.

Automatic Hibernation Mode

The computer can be configured to enter Hibernate Mode automatically when you press the power button or close the lid. In order to define these settings, you can follow the steps as described below:

1. Click **Start** and click the **Control Panel**.
2. Click **System and Maintenance** and click **Power Options**.
3. Click either **Choose what the Power Button do** or **Choose what closing the lid does**.
4. Enable the desired Hibernation Mode settings for **When I press the power button** and **When I close the lid**.
5. Click the **Save Changes** button.

Data save in Hibernation Mode

When you turn off the power in Hibernation Mode, the computer takes a moment to save the current data in memory to the hard disk drive. During this time, the **Hard Disk Drive** indicator will glow.

After you turn off the computer, and the content of memory has been saved to the hard disk drive, turn off the power to any peripheral devices.

Do not turn the computer or devices back on immediately. Wait a moment to let all capacitors to fully discharge.

Restarting the computer

You may need to restart your computer in such cases as: changes in computer settings, and system errors.

There are three (3) ways to restart the computer. You can do either of the following steps:

■ Click **Start** then click the arrow button (▶) in the power management buttons (⟨ ⏻   🔒 ▶ ⟩) and select Restart from the menu.
■ Press **Ctrl** + **Alt** + **Del** to display the menu window, then select **Restart** from the Shutdown options.
■ Press the power button and hold it down for five seconds. Once the computer has turned itself off, wait between ten and fifteen seconds before turning the power on again by pressing the power button.

System Recovery Options

About 1.5GB hidden partition is allocated on the hard disk drive for the System Recovery Options.

The System Recovery Options feature will be unusable if this partition is deleted.

The System Recovery Options feature is installed on the hard disk when shipped from the factory. The System Recovery Options menu includes some tools to repair startup problems,run diagnostics or restore the system. You can see the more information about "Startup Repair" in "Windows Help and Support" content.

The System Recovery Options can also be run manually to repair problems. The procedure is as follows. Follow the instructions shown on theonscreen menu.

To repair the errors, follow these steps:

1. Turn off the computer.
2. While holding the **F8** key, turn the computer on.
3. The **Advanced Boot Options** menu will be displayed. Use the arrow keys to select **Repair Your Computer** and press **Enter**.
4. Follow the on-screen instructions.

The Windows Vista® Complete PC Backup feature can be used on Windows Vista® Business Edition and Ultimate Edition.

Restoring the preinstalled software from the Product Recovery disc (provided with some models)

If preinstalled files are damaged, use the Product Recovery disc to restore them. To restore the operating system and all preinstalled software, follow the steps below.

When you reinstall the Windows operating system, the hard disk will be reformatted and all data will be lost. You can not use System Recovery Options if restoring the pre-installed software without System Recovery options.

1. Load the Product Recovery disc in the drive and turn off the computer's power.
2. Switch on the computer and, when the **In Touch with Tomorrow TOSHIBA** prompt appears, press the **F12** key to display the Boot Menu.
3. Use thecursor key to select the CD-ROM/DVD drive in the display menu.
4. Follow the on-screen instructions.
5. If your computer came with additional software installed, this software can not be recovered from the Product Recovery disk. Re-install these applications (e.g. Works Suite, DVD Player, Games, etc.) separately from other media.

Chapter 4

Basic Operations

This chapter gives information on basic operations including using the TouchPad, optical disc drives, the internal modem, LAN and wireless LAN. It also provides tips on caring for your computer and on heat dispersal.

Using the TouchPad

To use the TouchPad, simply move your finger tip across it in the direction you want the on-screen pointer to go.
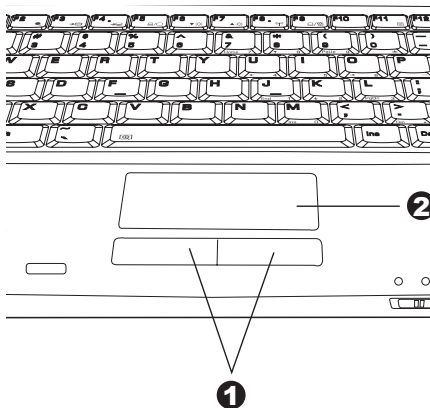
1.   TouchPad Control Buttons   2.   TouchPad

The two buttons below the TouchPad are used like the buttons on a standard mouse.

Press the left button to select a menu item or to manipulate text or graphics designated by the pointer. Press the right button to display a menu or other function depending on the software you are using.

Do not press on the TouchPad too hard or press a sharp object such as a ball point pen against it. The TouchPad could be damaged.

The TouchPad has similar functions to a two-button mouse with a scroll wheel. For some functions, you can tap it instead of pressing a button.

You can customize pointing device actions in Mouse Properties. Open the Control Panel, select the Mouse icon and press Enter to open the Mouse Properties window.

Click: *Click the left control button or tap the TouchPad once.*

Double-click: *Click the left control button twice or tap the TouchPad twice.*

Scroll: **Vertical:** *Move your finger up or down the right edge of the TouchPad.*

Horizontal: *Move your finger left or right along the bottom edge of the TouchPad.*

Using the internal modem

This section describes how to setup the modem and use it to connect to other computer systems. For more information, refer to the computer's online help files and the online help files for your modem software.

The internal modem does not support the voice functions described in the help files. All data and fax functions are supported.

- *In case of a lightning storm, unplug the modem cable from the telephone jack.*
- *Do not connect the modem to a digital telephone line. A digital line will damage the modem.*

* Some computers in this series are equipped with Modem functionality.

Important Safety Instructions

When using your telephone equipment, basic safety precautions should always be followed to reduce the risk of fire, electric shock and injury to persons, including the following:

1. *Do not use this product near water such as near a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement or a swimming pool.*
2. *Avoid using a telephone (other than a cordless type) during an electrical storm. There may be a remote risk of electric shock from lightning.*
3. *Do not use the telephone to report a gas leak in the vicinity of the leak.*
4. *Use only the power cord indicated in this manual.*

Region selection

Telecommunication regulations vary from one country/region to another, so you will need to make sure the internal modem's settings are correct for the country/region in which it will be used.

1. Open the Modem Region Select application. It is located on the Programs menu at **TOSHIBA → Networking**.

Do not use the Country/Region Select function in the Modem setup utility in the Control Panel if the function is available. If you change the Country/ Region in the Control Panel, the change may not take effect.

2. The Region Selection icon, as shown below, appears on the Windows Task Bar.

3. Click the icon with the primary mouse button to display a list of regions that the modem supports. A sub menu for telephony location information will also be displayed. A check will appear next to the currently selected region and telephony location.

4. Select a region from the region menu or a telephony location from the submenu.

   ■ When you click a region it becomes the modem's region selection, and the New Location for telephony will be set automatically.

   ■ When you select a telephony location, the corresponding region is automatically selected and it becomes the modem's current region setting.

Properties menu

Click the icon with the secondary mouse button to display the following menu.
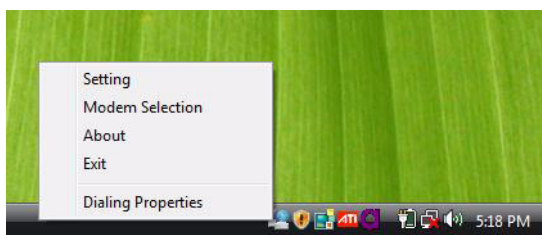
Settings

You can enable or disable the following settings:

AutoRun Mode

Region Select Utility starts automatically when you start up the operating system.

Open the Dialing Properties dialog box after selecting region

The dialing properties dialog box will be displayed automatically after you select the region.

Location list for region selection

A submenu appears displaying location information for telephony.

Open dialog box, if the modem and Telephony Current Location region code do not match

A warning dialog box is displayed if current settings for region code and telephony location are incorrect.

Modem Selection

If the computer cannot recognize the internal modem, a dialog box is displayed. Select the COM port for your modem to use.

Dialing Properties

Select this item to display the dialling properties.

If you are using the computer in Japan, technical regulations described in the Telecommunications Business Law require that you select Japan region mode. It is illegal to use the modem in Japan with any other selection.

Connecting

To connect the internal modem cable, follow the steps below.

- *In case of a lightning storm, unplug the modem cable from the telephone jack.*
- *Do not connect the modem to a digital telephone line. A digital line will damage the modem.*

1. Plug one end of the modular cable into the modem jack.
2. Plug the other end of the modular cable into a telephone jack.
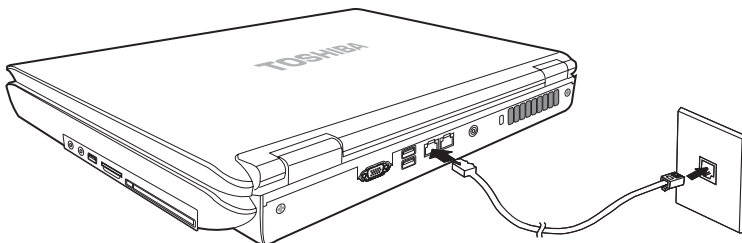
Do not pull on the cable or move the computer while the cable is connected.

If you use a storage device such as an optical media drive or hard disk drive connected to a 16-bit PC Card, you may find that the modem speed is slow or the communication session might be interrupted.

If you find that the modem speed is low or communication is interrupted when you are using the modem, set the CPU speed to Maximum within the Power Options.

Disconnecting

To disconnect the internal modem cable, follow the steps below.

1. Pinch the lever on the connector in the telephone jack and pull out the connector.
2. Disconnect the cable from the computer in the same manner.

LAN

The computer is equipped with networking hardware that supports Ethernet LAN (10 megabits per second, 10BASE-T), and Fast Ethernet LAN (100 megabits per second).

Do not install or remove an optional memory module while the Wake-up on LAN feature is enabled.

The Wake-up on LAN feature does not work on battery power, you should always leave the computer connected to the AC adapter if you are using this feature.

Connecting the LAN cable

> ⚠️ *The computer must be configured properly before connecting to a LAN. Logging onto a LAN using the computer's default settings could cause a malfunction in LAN operation. Check with your LAN administrator regarding set-up procedures.*

If you are using Ethernet LAN (10 megabits per second, 10BASE-T), you can connect using either a CAT5 or a CAT3 cable.

If you are using 100BASE-TX Fast Ethernet, you must connect using a CAT5 cable.

To connect the LAN cable, follow the steps below.

1. Turn off the power to the computer and to all external devices connected to the computer.

2. Plug one end of the cable into the LAN jack. Press gently until you hear the latch click into place.
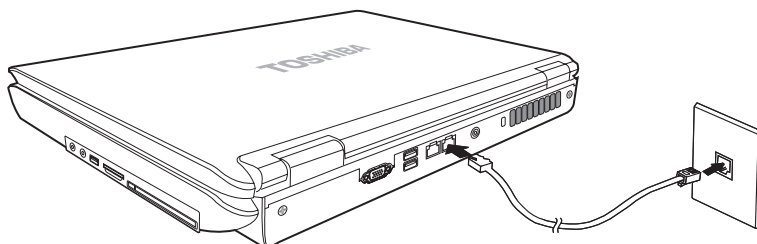
3. Plug the other end of the cable into a LAN hub connector. Check with your LAN administrator before connecting to a hub.

Disconnecting the LAN cable

To disconnect the LAN cable, follow the steps below.

1. Pinch the lever on the connector in the computer's LAN jack and pull out the connector.

2. Disconnect the cable from the LAN hub in the same manner. Check with your LAN administrator before disconnecting from the hub.

Wireless LAN

The wireless LAN is compatible with other LAN systems that comply with the IEEE 802.11 b/g / 802.11 a/b/g wireless LAN standards.

It supports the following:

■ Automatic Transmit Rate Select mechanism in the transmit range of 54, 11, 5.5, 2 and 1 Mbit/s.

■ Advanced Encryption Standard (AES) data encryption, based on 256bit encryption algorithm.

Wake-up on LAN does not function on a Wireless LAN.

■ Roaming over multiple channels
■ Card Power Management
■ Wired Equivalent Privacy (WEP) data encryption

Network

It may not be possible to make a network connection to a specified network name using the ad hoc network function. If this occurs, the new network will have to be configured for all computers connected to the same network in order to re-enable network connections.

Make sure that you use a new network name.

Security

1. TOSHIBA strongly recommends that you enable the encryption function otherwise your computer could be left open to illicit access via the wireless LAN connection which may result in an intrusion that can lead to theft or loss of stored data. In addition, the owner of an Internet connection is responsible for all browsing, downloading, and uploading activities on that connection. Therefore, an unsecured wireless network connected directly to the Internet is an open invitation for outsiders to abuse your ISP account and privileges.

2. TOSHIBA is not liable for the eavesdropping on your data due to the use of the wireless LAN connection and any damage that may occur thereof.

Wireless communication switch

You can enable or disable the wireless LAN function with the on/off switch. No transmissions are sent or received when the switch is off. Slide the switch forward to turn it on and backward to turn it off.

Turn the switch off in airplanes and hospitals. Check the LED, it stops glowing when the wireless communication function is off.

Wireless communication LED

The LED indicates the status of the wireless communication functions.

LED status	Indication
LED off	Wireless communication switch is set to off.
LED glows	Wireless communication switch is on.

Using optical disc drives

The illustrations in this section might differ slightly from your drive, but operation is the same for all optical disc drives. The full-size drive provides high-performance execution of disc-based programs. You can run either 12cm (4.72") or 8cm (3.15") discs without an adapter. An ATAPI interface controller is used for disc drive operation. When the computer is accessing a disc, an indicator on the drive illuminates.

Use the TOSHIBA DVD Player application to view DVD-Video discs.

If you have a CD-RW/DVD-ROM drive, refer also to the Writing CDs on CDRW/DVD-ROM drive section for precautions on writing to CDs.

If you have a DVD Super Multi drive, refer also to the Writing CD/DVDs on DVD Super Multi drive section for precautions on writing to CDs.

If you have a DVD-ROM, you cannot write to CDs.

Loading optical disc media

To load a disc, follow the steps below.

1. Turn on the power.
2. a. Press the eject button to open the drawer slightly.
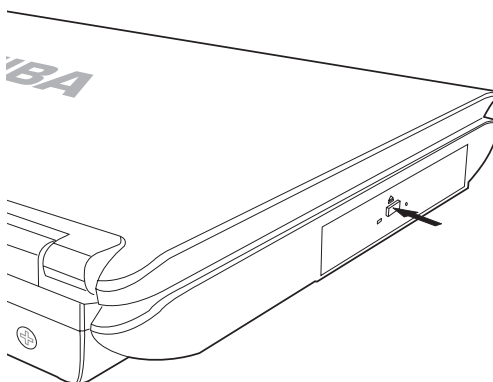
b. Pressing the eject button will not open the drawer when the computer's power is off. If the power is off, you can open the drawer by inserting a slender object (about 15 mm) such as a straightened paper clip into the eject hole just to the right of the eject button.
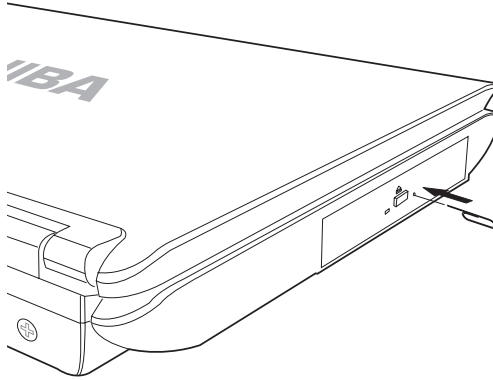
3. Grasp the drawer gently and pull until it is fully open.
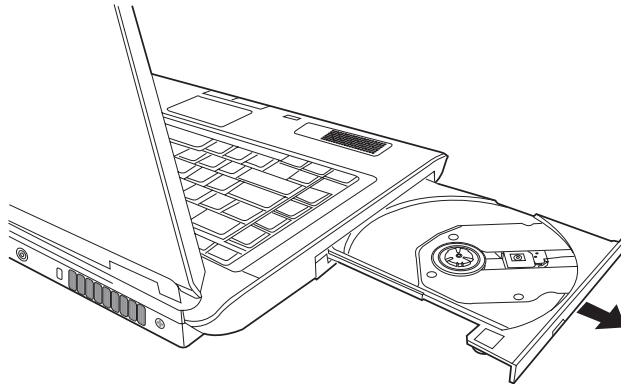
4. Lay the disc, label side up, in the drawer.
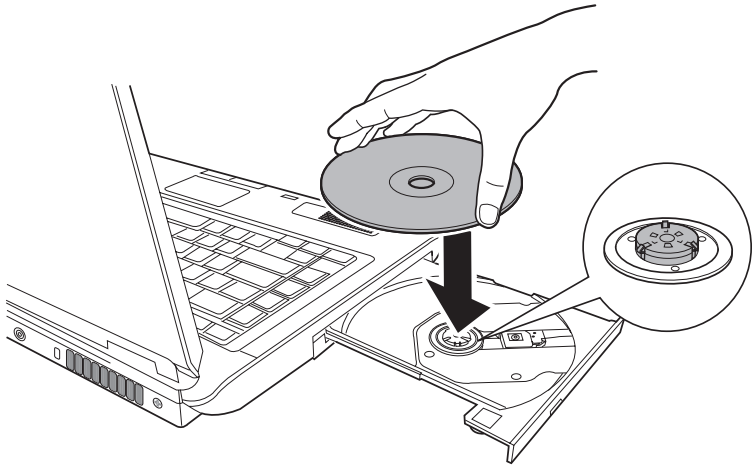
Be careful not to touch the lens or the area around it. Doing so could cause the drive to malfunction.

5. Press gently at the center of the disc until you feel it click into place. The disc should lie below the top of the spindle, flush with its base.

6. Push the center of the drawer to close it. Press gently until it locks in place.

If the disc is not seated properly when the drawer is closed, it might be damaged. Also, the drawer might not open fully when you press the eject button.
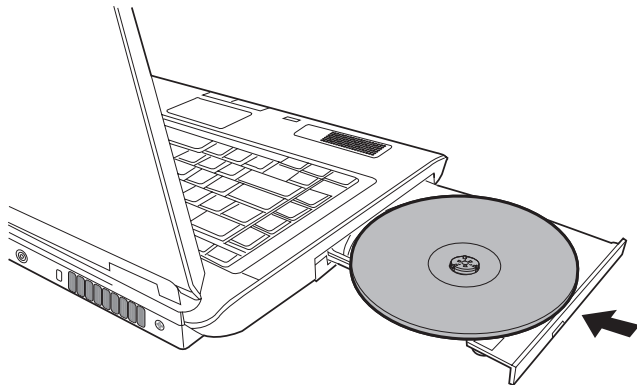
Removing compact discs

To remove the disc, follow the steps below.

⚠️ *Do not press the eject button while the computer is accessing the disc drive. Wait for the optical disc indicator to go out before you open the drawer. Also, if the disc is spinning when you open it, wait for it to stop before you remove it.*

1. To pop the drawer partially open, press the eject button. Gently pull the drawer out until it is fully opened.

⚠️ ■ *In When the drawer pops open slightly, wait a moment to make sure the disc has stopped spinning before pulling the drawer fully open.*

■ *Turn off the power before you use the eject hole. If the disc is spinning when you open the drawer, it could fly off the spindle and cause injury.*

2. The disc extends slightly over the sides of the drawer so you can grasp it. Hold it gently and lift it out.
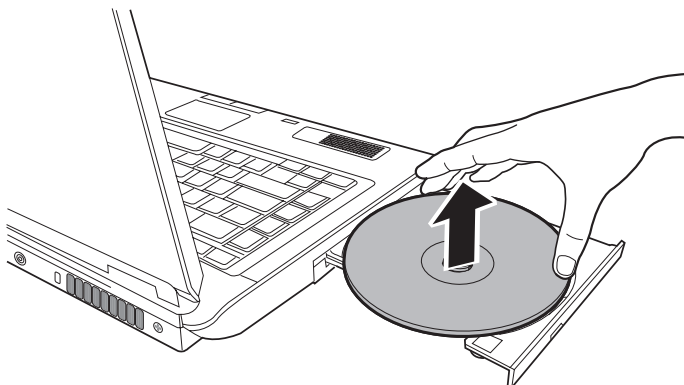
3. Push the center of the drawer to close it. Press gently until it locks into place.

Writing CDs on a CD-RW/DVD-ROM drive

You can use the CD-RW/DVD-ROM drive to write data to CD-R/RW discs. This application for writing is preinstalled: **TOSHIBA Disc Creator**.

Important message

Before you write or rewrite to CD-R/RW media, read and follow all setup and operating instructions in this section. If you fail to do so, the CD-RW/DVD-ROM drive may not function properly, and you may fail to write or rewrite, lose data or incur other damage.

Disclaimer

TOSHIBA does not bear responsibility for the following:

■ Damage to any CD-R/-RW disc that may be caused by writing or rewriting with this product.

■ Any change or loss of the recorded contents of CD-R/-RW media that may be caused by writing or rewriting with this product, or for any business profit loss or business interruption that may be caused by the change or loss of the recorded contents.

■ Damage that may be caused by using third party equipment or software. Given the technological limitations of current optical disc writing drives, you may experience unexpected writing or rewriting errors due to disc quality or problems with hardware devices. Also, it is a good idea to make two or more copies of important data, in case of undesired change or loss of the recorded contents.

CD-R discs can be written only once. CD-RW discs can be rewritten many times.

Before writing or rewriting

Observe the following points when you write or rewrite the data.

■ We recommend the following manufacturers of CD-R and CD-RW media. Media quality can affect write or rewrite success rates. CD-R discs can be written only once. CD-RW discs can be rewritten many times.

CD-R	TAIYOYUDEN CO., LTD.
	MITSUBISHI KAGAKU MEDIA CO., LTD.
	RICOH Co., Ltd.
	Hitachi Maxell Ltd.
CD-RW and High speed CD-RW	MITSUBISHI KAGAKU MEDIA CO., LTD.
	RICOH Co., Ltd.
Ultra speed CD-RW	MITSUBISHI KAGAKU MEDIA CO., LTD.

TOSHIBA has confirmed the operation of CD-R and CD-RW media of the manufacturers above. Operation of other media cannot be guaranteed.

■ CD-RW can generally be rewritten about 1,000 times. However, the actual number of rewrites is affected by the quality of the media and the way it is used.

■ Be sure to connect the universal AC adapter when you write or rewrite.

■ Be sure to close all other software programs except the writing software.

■ Do not run software such as a screen saver which can put a heavy load on the CPU.

■ Operate the computer at full power. Do not use power-saving features.

■ Do not write while virus check software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.

■ Do not use hard disk utilities, including those intended to enhance hard disk access speeds, as they may cause unstable operation and damage data.

■ Write from the computer's hard disk drive to the CD. Do not try to write from shared devices such as a LAN server or any other network device.

■ Writing with software other than TOSHIBA Disc Creator has not been confirmed. Operation with other software cannot be guaranteed.

When writing or rewriting

Observe/consider the following when you write or rewrite to a CD-R/RW, DVD-R/-RW/-RAM or DVD+R/+RW disc.

■ Do not perform any of the following actions when writing or rewriting:

  ■ Change users in the Windows Vista® operating system.

  ■ Operate the computer for any other function, including using a mouse or TouchPad or closing/opening the LCD panel.

  ■ Start a communication application such as a modem.

  ■ Apply impact or vibration to the computer.

  ■ Install, remove or connect external devices such as PC card, USB devices, an external display, i.Link devices or optical digital devices.

  ■ Use the audio/video control button to reproduce music or voice.

  ■ Open the drive.

■ Do not use shut down/log off and Sleep/Hibernation while writing or rewriting.

■ Make sure writing or rewriting is completed before going into Sleep/hibernation. Writing is completed if you can open the drive tray.

■ Place the computer on a level surface and avoid places subject to vibration such as airplanes, trains or cars. Do not use an unstable surface such as a stand.

■ Keep mobile phones and other wireless communication devices away from the computer.

■ Always copy data from the hard disk drive to the CD. Do not use cut and paste as the original data will be lost if there is a write error.

Writing CDs/DVDs on a DVD Super Multi drive supporting double layer disc recording

You can use the DVD Super Multi drive to write data to either CD-R/RW or DVD-R/-RW/+R/+RW/-RAM discs. The following applications for writing are preinstalled:

■ TOSHIBA Disc Creator.
■ Ulead DVD MovieFactory® for TOSHIBA, which is a product of Ulead Systems, Inc.

Important message

Before you write or rewrite to CD-R/RW or DVD-R/-RW/+R/+RW/-RAM media, read and follow all set-up and operating instructions in this section. If you fail to do so, the DVD Super Multi drive may not function properly, and you may fail to write or rewrite, lose data or incur other damage.

Disclaimer

TOSHIBA does not bear responsibility for the following:

■ Damage to any CD-R/RW or DVD-R/-RW/+R/+RW/-RAM disc that may be caused by writing or rewriting with this product.
■ Any change or loss of the recorded contents of CD-R/RW or DVD-R/-RW/+R/+RW/-RAM media that may be caused by writing or rewriting with this product, or for any business profit loss or business interruption that may be caused by the change or loss of the recorded contents.
■ Damage that may be caused by using third party equipment or software.

Given the technological limitations of current optical disc writing drives, you may experience unexpected writing or rewriting errors due to disc quality or problems with hardware devices. Also, it is a good idea to make two or more copies of important data, in case of undesired change or loss of the recorded contents.

Before writing or rewriting

Observe the following points when you write or rewrite data.

■ Based on TOSHIBA's limited compatibility testing, we suggest the following manufacturers of CD-R/RW and DVD-R/+R/-RW/+RW/-RAM media. However, in no event does TOSHIBA guarantee the operation, quality or performance of any disc. Disc quality can affect write or rewrite success rates.

CD-R	TAIYOYUDEN CO., LTD.
	MITSUBISHI KAGAKU MEDIA CO., LTD.
	RICOH Co., Ltd.
	Hitachi Maxell Ltd.
CD-RW and High speed CD-RW	MITSUBISHI KAGAKU MEDIA CO., LTD.
	RICOH Co., Ltd.
Ultra speed CD-RW	MITSUBISHI KAGAKU MEDIA CO., LTD.
DVD-R	DVD Specifications for Recordable Disc for General Version 2.0
	TAIYOYUDEN CO., LTD.
	Matsushita Electric Industrial Co., Ltd.
DVD-RW	DVD Specifications for Re-recordable Disc for Version 1.1 or Version 1.2
	VICTOR COMPANY OF JAPAN, LIMITED
	MITSUBISHI KAGAKU MEDIA CO., LTD.
DVD+R	MITSUBISHI KAGAKU MEDIA CO., LTD.
	RICOH Co., Ltd
DVD+RW	MITSUBISHI KAGAKU MEDIA CO., LTD.
	RICOH Co., Ltd.
*DVD-RAM	DVD Specifications for DVD-RAM Disc for Version 2.0, Version 2.1 or Version 2.2
	Matsushita Electric Industrial Co., Ltd.
	Hitachi Maxell Ltd.
DVD+R (Double Layer)	MITSUBISHI KAGAKU MEDIA CO., LTD.
DVD-R (Dual Layer)	MITSUBISHI KAGAKU MEDIA CO., LTD.

■ If the disc is poor in quality, dirty or damaged, writing or rewriting errors may occur. Be careful to check the disc for dirt or damage before you use it.

■ The actual number of rewrites to CD-RW or DVD-RW/+RW/-RAM is affected by the quality of the disc and the way it is used.

■ There are two types of DVD-R: authoring and general use discs. Do not use authoring discs. Only general use discs can be written to by a computer drive.

■ We can support only Format 1 of DVD-R DL. Therefore you can not do the additional writing. If your data is under DVD-R (SL) capacity, we suggest to use DVD-R (SL) media.

- You can use DVD-RAM discs that can be removed from a cartridge and DVD-RAM discs designed without a cartridge. You cannot use a disc with a 2.6GB single-sided capacity or 5.2GB double-sided capacity.

- Other DVD-ROM drives for computers or other DVD players may not be able to read DVD-R/+R/-RW/+RW/-RAM discs.

- Data written to a CD-R/DVD-R/+R disc cannot be deleted either in whole or in part.

- Data deleted (erased) from a CD-RW and DVD-RW/+RW/-RAM disc cannot be recovered. Check the content of the disc carefully before you delete it. If multiple drives that can write data to discs are connected, be careful not to delete data from the wrong drive.

- In writing to a DVD-R/+R/-RW/+RW disc, some disc space is required for file management, so you may not be able to write the full capacity of the disc.

- Since the disc is based on the DVD-R/-RW standard, it will be filled with dummy data if the written data is less than about 1GB. Even if you write only a small amount of data, it might take time to fill in the dummy data.

- Two types of DVD-R/+R/-RW/+RW/-RAM discs are on the market: data and video. Use a video disc to store video data. You can use video discs on a DVD recorder as well as on your computer's DVD-ROM drive. You cannot use data discs on a DVD recorder.

- DVD-RAM formatted by FAT32 cannot be read in Windows 2000 without DVD-RAM Driver Software.

- When multiple drives that can write data to discs are connected, be careful not to write to the wrong drive.

- Be sure to connect the universal AC adapter before you write or rewrite.

- Before you enter Sleep/Hibernation Mode, be sure to finish DVD-RAM writing. Writing is finished if you can eject DVD-RAM media.

- Be sure to close all other software programs except the writing software.

- Do not run software such as a screen saver, which can put a heavy load on the CPU.

- Operate the computer at full power. Do not use power-saving features.

- Do not write while virus check software is running. Wait for it to finish, then disable virus detection programs including any software that checks files automatically in the background.

- Do not use hard disk utilities, including those intended to enhance hard disk access speed, as they may cause unstable operation and damage data.

- Write from the computer's hard disk drive to the CD. Do not try to write from shared devices such as a LAN server or any other network device.

- Writing with software other than TOSHIBA Disc Creator or Ulead DVD MovieFactory® for TOSHIBA has not been confirmed. Therefore, operation with other software cannot be guaranteed.

When writing or rewriting

Observe/consider the following when you write or rewrite to a CD-R/RW, DVD-R/-RW/-RAM or DVD+R/+RW disc.

Do not perform any of the following actions when writing or rewriting:

■ Change users in the Windows Vista® operating system.

■ Operate the computer for any other function, including using a mouse or TouchPad or closing/opening the LCD panel.

■ Start a communication application such as a modem.

■ Apply impact or vibration to the computer.

■ Install, remove or connect external devices such as PC card, USB devices, an external display, i.Link devices or optical digital devices.

■ Use the audio/video control button to reproduce music or voice.

■ Open the drive.

■ Do not use shut down/log off and Sleep/Hibernation while writing or rewriting.

■ Make sure writing or rewriting is completed before going into Sleep/hibernation. Writing is completed if you can open the drive tray.

■ Place the computer on a level surface and avoid places subject to vibration such as airplanes, trains or cars. Do not use an unstable surface such as a stand.

■ Keep mobile phones and other wireless communication devices away from the computer.

■ Always copy data from the hard disk drive to the CD. Do not use cut and paste as the original data will be lost if there is a write error.

When Using Ulead DVD MovieFactory® for TOSHIBA

How to make a DVD-Video

Simplified steps for making a DVD-Video from video data captured from a DV-Camcorder:

1. Click **Start → All Programs → DVD MovieFactory for TOSHIBA → Ulead DVD MovieFactory for TOSHIBA Launcher** to launch DVD MovieFactory.

2. Insert a DVD-RW or DVD+RW disc in Burner.

3. Click **Video Disc → Burn Video to Disc** to launch **Direct Recording** dialog box, choose **DVD-Video/+VR** to invoke **Straight Capture to Disc** Page.

4. Choose **DVD-Video** format.

5. Confirm the capture source is DV.

6. Press **Capture** button.

Simplified steps for making a DVD-Video from adding a video source:

1. Click **Start → All Programs → DVD MovieFactory for TOSHIBA → Ulead DVD MovieFactory for TOSHIBA Launcher** to launch DVD MovieFactory.
2. Click **Video Disc → New Project** to invoke 2nd Launcher, choose your project type, then invoke DVD MovieFactory.
3. Add source from HD Disk by click **Add Video files** button to invoke browser dialog box.
4. Choose the sourse video then go to the **Next** page to apply **Menu**.
5. After choose the menu template, press **Next** button to go to **Burning Page**.
6. Choose the output type then press **Burn** button.

How to learn more about Ulead DVD MovieFactory®

Please refer to the Help and Manul file for additional Ulead DVD MovieFactory information.

Important information for use

Note the following limitations when you write video DVD:

1. Editing digital video

- Log in with Administrator rights to use DVD MovieFactory.
- Make sure that your computer is running on AC power when using DVD MovieFactory
- Operate the computer at Full Power. Do not use power-saving features.
- While you are editing DVD, you can display previews. However, if another application is running, the preview might not display properly.
- DVD MovieFactory cannot edit or play copy protected content.
- Do not enter Sleep/Hibernation Mode while using DVD MovieFactory.
- Do not operate DVD MovieFactory immediately after turning on the computer. Wait until all Disc Drive activity has stopped.
- When recording to a DV-Camcorder, to ensure you capture all of your data, let the camcorder record for a few seconds before you begin recording your actual data.
- CD recorder, JPEG functions, DVD-Audio, mini DVD and Video CD functions are not supported in this version.
- While recording video to DVD or tape, close all other programs.
- Do not run software like a screen saver because it can put a heavy load on the CPU.
- Do not support MP3 decode and encode.

2. Before recording the video to DVD

- When you record to DVD disc, use only discs recommended by the Drive manufacturer.

■ Do not set the working drive to a slow device like a USB 1.1 hard disk drive or it will fail to write DVD.

■ Do not perform any of the following actions:

■ Operate the computer for any other function, including using a mouse or TouchPad or closing/opening the LCD panel.

■ Bump or cause vibration to the computer.

■ Use the Mode control button and Audio/Video control button to reproduce music or voice.

■ Open the DVD drive.

■ Install, remove or connect external devices, including the following: PC card, SD card, USB devices, external display, i.LINK. devices, optical digital devices.

■ Verify your disc after recording important data.

■ DVD-R/+R/-RW disc cannot be written in VR format.

■ Not support to output VCD or SVCD format.

3. About Straight to Disc

■ Not support to record on DVD-R/+R disc

■ Not support to record DVD+VR format by HDV

■ HDV support to burn DVD-Video only

■ DVD-VR format not support to add Menu

4. About recorded DVDs

■ Some DVD-ROM drives for personal computers or other DVD players may not be able to read DVD-R/+R/-RW/-RAM discs.

■ When playing your recorded disc on your computer, please use the TOSHIBA DVD Player software application.

■ If you use an over-used rewritable disc, the full formatting might be locked. Use a brand new disc.

TOSHIBA Disc Creator

Note the following limitations when you use TOSHIBA Disc Creator:

■ DVD-Video cannot be created using TOSHIBA Disc Creator

■ DVD-Audio cannot be created using TOSHIBA Disc Creator

■ You cannot use the TOSHIBA Disc Creator "Audio CD" function to record music to the DVD-R/-RW or DVD+R/+RW media.

■ Do not use the "Disc Backup" function of TOSHIBA Disc Creator to copy DVD-Video and DVD-ROM with copyright protection.DVD-RAM media cannot be backed up with the "Disc Backup" function of TOSHIBA Disc Creator

■ You cannot back up a CD-ROM or CD-R/RW to DVD-R/-RW or DVD+R/+RW using the Disc Backup function of TOSHIBA Disc Creator

■ You cannot back up DVD-ROM, DVD-Video or DVD-R/-RW or DVD+R/+RW to CD-R/RW using TOSHIBA Disc Creator

■ TOSHIBA Disc Creator cannot record in packet format.

■ You might not be able to use the Disc Backup function of TOSHIBA Disc Creator to backup a DVD-R/-RW or DVD+R/+RW disc that was made with other software on a different DVD-R/-RW or DVD+R/+RW recorder.

■ If you add data to a DVD-R and DVD+R disc that you have already recorded to, you might not be able to read the added data under some circumstances. It cannot be read in 16-bit operating systems, such as Windows 98SE and Windows ME, in Windows NT4 you will need Service Pack 6 or later to read the data, and in Windows 2000 you will need Service Pack 2 or later to read it. Some optical media drives cannot read added data regardless of the operating system.

■ TOSHIBA Disc Creator does not support recording to DVD-RAM discs. To record to a DVD-RAM, use Explorer or other similar utility.

■ When you back up a DVD disc, be sure the source drive supports recording to DVD-R/-RW or DVD+R/+RW discs. If the source drive does not support recording to DVD-R/-RW or DVD+R/+RW discs, it might not be backed up correctly.

■ When you back up a DVD-R, DVD-RW, DVD+R or DVD+RW, be sure to use the same type of disc.

■ You cannot partially delete any data written to a CD-RW, DVD-RW or DVD+RW disc.

Data Verification

To verify that data is written or rewritten correctly, follow the steps below before you write or rewrite a Data CD/DVD.

1. Display the setting dialog box by one of the following two steps:

■ Click the setting button ( ) for writing on the main toolbar in the **Data CD/DVD** mode.

■ Select **Setting for writing** → **Data CD/DVD** in the **Setting** menu.

2. Mark the **Verify written data** check box.

3. Select **File Open** or **Full Compare** mode.

4. Click the **OK** button.

Media Care

This section provides tips on protecting data stored on your discs and disks.

Handle your media with care. The following simple precautions will increase the lifetime of your media and protect the data stored on it:

1. Store your discs in the container they came in to protect them and keep them clean.

2. Do not bend the disc.

3. Do not write on, apply a sticker to, or otherwise mar the surface of the disc that contains data.

4. Hold the disc by its outside edge or the edge on the center hole.

5. Do not expose to direct sunlight, or extreme heat or cold, and do not place heavy objects on your discs.

6. If your discs become dusty or dirty, wipe them with a clean dry cloth. Wipe from the center out, do not wipe in a circular direction around the disc. If necessary, use a cloth dampened in water or a neutral cleaner. Do not use benzine, thinner, or similar cleaner.

Discs

1. Store your discs in the container they came in to protect them and keep them clean. If a disk is dirty, do not use cleaning fluid. Clean it with a soft damp cloth.

2. Do not slide back the disc's protective metal covering or touch the disc's magnetic surface.

3. Data may be lost if the disc is twisted, bent, or exposed to direct sunlight, or extreme heat or cold.

4. Do not place heavy objects on your discs.

5. Do not eat, smoke, or use erasers near your discs. Foreign particles inside the disk's jacket can damage the magnetic surface.

6. Magnetic energy can destroy data on discs. Keep your discs away from speakers, radios, television sets and other sources of magnetic fields.

Setting up more than one display

You can set up your computer to utilize more than one display, effectively spreading a single desktop screen across two monitors.

The Display Properties window allows you to adjust more precisely the relative positioning of the two displays when they are configured as an extended desktop. On the Display Properties window, the two displays can be positioned horizontally, vertically or in any diagonal configuration you wish, as shown below.
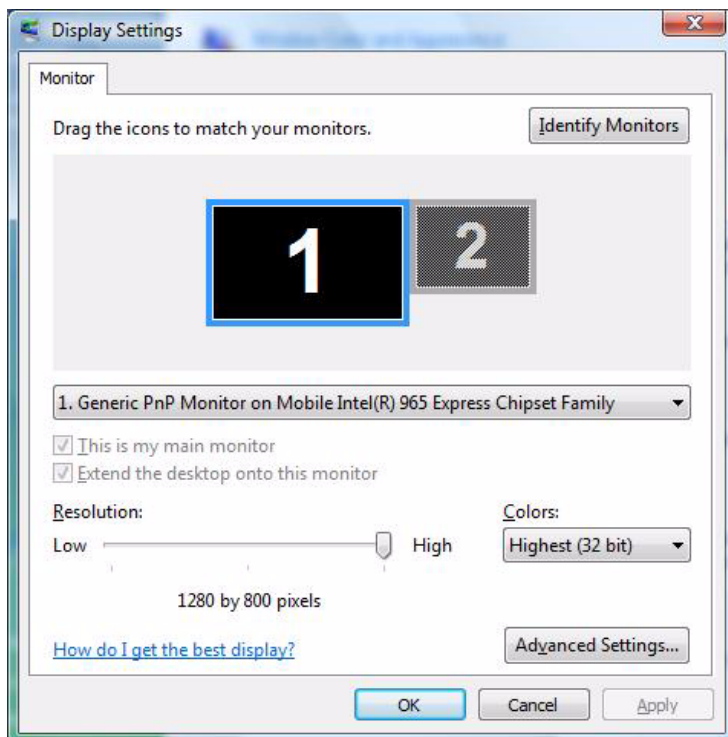
If an external display will not be connected next time you use your computer, you should cancel any extended desktop or clone display settings before shutting down your computer.

Clone display settings are those where more than one device has been selected and is simultaneously applicable.

Cleaning the computer

To help ensure long, trouble-free operation, keep the computer free of dust and use care with liquids around the computer.

■ Be careful not to spill liquids into the computer. If the computer does get wet, turn the power off immediately and let the computer dry completely before you turn it on again.

■ Clean the computer using a slightly damp (with water) cloth. You can use glass cleaner on the display. Spray a small amount of cleaner on a soft, clean cloth and wipe the screen gently with the cloth.

Never spray cleaner directly onto the computer or let liquid run into any part of it. Never use harsh or caustic chemical products to clean the computer.

Moving the computer

The computer is designed for rugged durability. However, a few simple precautions taken when moving the computer will help ensure trouble-free operation.

■ Make sure all disk activity has ended before moving the computer. Check the Built-in Hard Disk Drive and optical disc drive indicators on the computer.

■ If a disk is in the disk drive, remove it.

■ If a disc is in the optical disc drive, remove it. Also make sure the optical disc drive drawer is securely closed.

■ Turn off the power to the computer.

■ Disconnect all peripherals before moving the computer.

■ Close the display. Do not pick up the computer by its display panel or back (where the interface ports are located).

■ Close all port covers.

■ Disconnect the AC adapter if it is connected.

■ Use the carrying case when transporting the computer.

Chapter 5

The Keyboard

The computer's keyboard layouts are compatible with a 104/105-key enhanced keyboard. By pressing some keys in combination, all the 104/105-key keyboard functions can be executed on the computer.

The number of keys on your keyboard depends on which country/region's keyboard layout your computer is configured with. Keyboards for numerous languages are available.

There are five types of keys: typewriter keys, keypad overlay, function keys, soft keys, Windows® special keys and cursor control keys.

Typewriter keys

The typewriter keys, produce the upper- and lower-case letters, numbers, punctuation marks, and special symbols that appear on the screen.

There are some differences, however, between using a typewriter and using a computer keyboard:

■ Letters and numbers produced in computer text vary in width. Spaces, which are created by a space character may also vary depending on line justification and other factors.

■ The lowercase l (el) and the number 1 (one) are not interchangeable on computers as they are on a typewriter.

■ The uppercase O (oh) and the 0 (zero) are not interchangeable.

■ The **Caps Lock** function key locks only the alphabetic characters in uppercase while the shift lock on a typewriter places all keys in the shifted position.

■ The **Shift** keys, the **Tab** key, and the **BkSp** (backspace) key perform the same function as their typewriter counterparts but also have special computer functions.

F1 ... F12 function keys

The function keys, not to be confused with **Fn**, are the 12 keys at the top of your keyboard. These keys are dark gray, but function differently from the other dark gray keys.

F1 through **F12** are called function keys because they execute programmed functions when pressed. Used in combination with the **Fn** key, keys marked with icons execute specific functions on the computer. See the section, *Soft keys: Fn key combinations*, in this chapter. The function executed by individual keys depends on the software you are using.

Soft keys: Fn key combinations

The **Fn** (function) is unique to TOSHIBA computers and is used in combination with other keys to form soft keys. Soft keys are key combinations that enable, disable or configure specific features.

> *Some software may disable or interfere with soft-key operations. Soft-key settings are not restored by the Sleep feature.*

Emulation keys

Your software may require you to use keys that the keyboard does not have. Pressing the **Fn** key and one of the following keys simulates the enhanced keyboard's functions
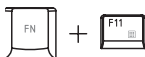
Press **Fn** + **F11** to access the integrated keypad. When activated, the gray keys with white numbers become numeric keypad keys (**Fn** + **F11**). Refer to the Keypad overlay section in this chapter for more information on how to operate these keys. The power on default is off.

Press **Fn** + **F12** (**ScrLock**) to lock the cursor on a specific line. The power on default is off.

Press **Fn** + **Enter** to simulate **Enter** on the enhanced keyboard's numeric keypad.

Hotkeys

◁◁)/◁	**Fn** + **ESC**	**Mute** – Turns the volume on and off.
🔒	**Fn** + **F1**	**Lock** – Enters "Lock computer" mode. To restore your desktop, you need to log on again.
●	**Fn** + **F2**	**Power Plan Mode** – Displays the power save modes and lets you change the power settings
→⬚	**Fn** + **F3**	**Sleep** – This hot key switches the system to Sleep mode.
→⊟	**Fn** + **F4**	**Hibernate** – This hot key switches the system to Hibernate mode.
💻/▢	**Fn** + **F5**	**Output** – Changes displays.

ⓘ *Default resolution for simultaneous mode is set to WXGA (1280 × 800). If you connect an RGB (Monitor) that is not WXGA resolution, change it in "Display Properties".*

▼☼	**Fn** + **F6**	**Brightness (decreases)**
▲☼	**Fn** + **F7**	**Brightness (increases)**
((•))	**Fn** + **F8**	**Wireless** – Enables you to switch between active devices if the wireless communication is switched on.
▢/●	**Fn** + **F9**	**Touchpad On/Off**
▦	**Fn** + **F11**	**Numeric Keypad On/Off** – This hot key enables/disables the embedded cursor keypad. For more details, see Chapter 3.
↑↓	**Fn** + **F12**	**Scroll Lock On/Off**
	Fn + ↑	**Volume up**
	Fn + ↓	**Volume down**

Windows special keys

The keyboard provides two keys that have special functions in Windows Vista®. One activates the Start menu and the other has the same function as the secondary mouse button.

⊞ This key activates the Windows Vista® Start menu

🗐 This key has the same function as the secondary mouse button.

Keypad overlay

Your computer's keyboard does not have an independent numeric keypad, but its numeric keypad overlay functions like one.

The keys in the center of the keyboard with white letters make up the numeric keypad overlay. The overlay provides the same functions as the numeric keypad.

Turning on the overlays

The numeric keypad overlay can be used for numeric data input or cursor and page control.

Numeric mode

To turn on the Numeric mode, press **Fn** + **F11** (Numeric mode indicator lights). Now try numeric data entry using the keys below. Press **Fn** + **F11** again to turn off the overlay.

Temporarily using Arrow mode

If the computer is in Numeric mode, you can switch temporarily to Arrow mode by pressing a shift key. In the Arrow mode, try cursor and page control using the keys shown in the diagram below.
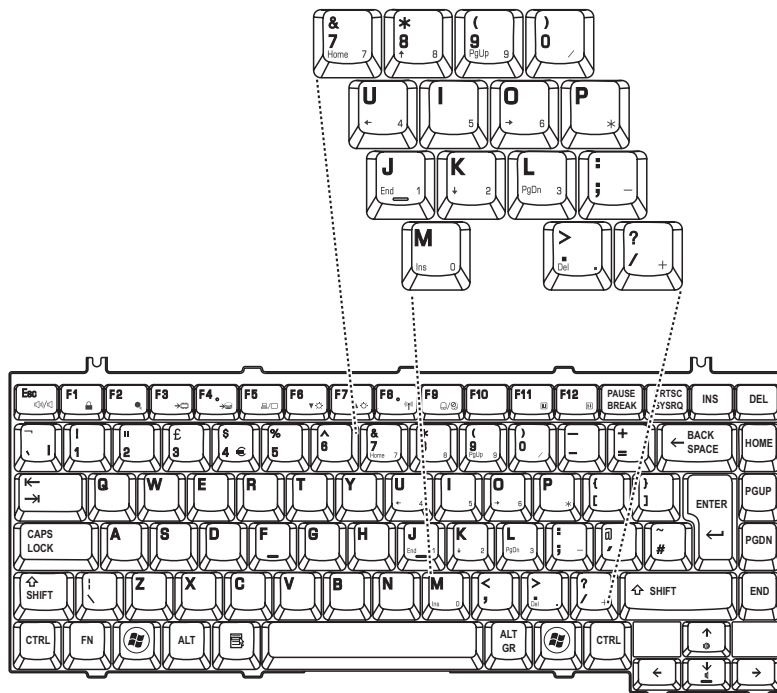
Temporarily using normal keyboard (overlay on)

While using the overlay, you can temporarily access the normal keyboard without turning off the overlay:

1. Hold down **Fn** and press any other key. All keys will operate as if the overlay were off.
2. Type upper-case characters by holding down **Fn** + **Shift** and pressing a character key.
3. Release **Fn** to continue using the overlay.

Temporarily using overlay (overlay off)

While using the normal keyboard, you can temporarily use the keypad overlay without turning it on:

1. Press and hold down **Fn**.
2. Check the keyboard indicators. Pressing **Fn** turns on the most recently used overlay. If the Numeric mode indicator lights up, you can use the overlay for numeric entry. If the Numeric indicator is off, you can use it for cursor and page control.
3. Release **Fn** to return to normal keyboard operation.

Generating ASCII characters

Not all ASCII characters can be generated using normal keyboard operation. But, you can generate these characters using their ASCII codes.

With the overlay on:

1. Hold down **Alt**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt**, and the ASCII character appears on the display screen.

With the overlay off:

1. Hold **Alt** + **Fn**.
2. Using the overlay keys, type the ASCII code.
3. Release **Alt** + **Fn**, and the ASCII character appears on the display screen.

Chapter 6

Power and Power-Up Modes

The computer's power resources include the AC adapter and internal batteries. This chapter gives details on making the most effective use of these resources including charging and changing batteries, tips for saving battery power, and power up modes.

Power conditions

The computer's operating capability and battery charge status are affected by the power conditions: whether an AC adapter is connected, whether a battery is installed and what the charge level is for the battery.

Power indicators

As shown in the above table, the **Battery**, **DC IN** and **Power** indicators alert you to the computer's operating capability and battery charge status.

Battery indicator

Check the **Battery** indicator to determine the status of the battery. The following indicator lights indicate the battery status.

Blinking amber	The battery capacity is below 10%. The AC adapter must be connected to recharge the battery.
Amber	Indicates the AC adapter is connected and is charging the battery.
Green	Indicates the AC adapter is connected and the battery is fully charged.
No light	Under any other conditions, the indicator does not light.

Power indicator

Check the **DC IN** indicator to determine the power status with the AC adapter connected:

Green	The power button will glow green while power is being supplied and the computer is turned on. The power indicator on the front of computer will glow green when the computer is switched on.
Blinking amber	Indicates power is being supplied to the computer while the computer is in Sleep mode.
No light	Under any other conditions, the indicator does not light.

Battery types

The computer has two (2) types of batteries:

■ Battery pack
■ Real Time Clock (RTC) battery

Battery pack

When the AC adapter is not connected, the computer's main power source is a removable lithium ion battery pack, also referred to in this manual as the battery.

You can purchase additional battery packs for extended use of the computer away from an AC power source.

The battery is a disposable item. When its operation becomes short even when fully charged, replace it with a new one.

■ *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled, or disposed. Dispose the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*

■ *Do not remove the battery pack while the computer is in Sleep Mode. In this mode data is stored in memory, so if the computer loses power, data will be lost.*

■ *Battery type (depending on the purchased model): 6-cell - PA3615U-1BAM, PA3615U-1BRM.*

Real Time Clock battery

The Real Time Clock (RTC) battery provides power for the internal real time clock and calendar. It also maintains the system configuration.

If the RTC battery becomes completely discharged, the system loses this data and the real time clock and calendar stop working.

Care and use of the battery pack

The battery pack is a vital component of portable computing. Taking proper care of it will help ensure longer operating time on battery power as well as a longer life for your battery pack. Follow the instructions in this section carefully to ensure safe operation and maximum performance.

Safety precautions

Mishandling of batteries can cause death, serious injury or property damage. Carefully observe the following advisories:

Danger: Indicates an imminently hazardous situation, which could result in death or serious injury, if you do not follow instructions.

Warning: Indicates a potentially hazardous situation, which could result in death or serious injury, if you do not follow instructions.

Caution: Indicates a potentially hazardous situation, which if not avoided, may result in moderate or minor injury or property damage.

Note: Provides important information.

Danger

1. **DO NOT** burn or expose the battery pack to a heating device such as a microwave oven. The battery pack could explode and cause bodily injury.

2. **DO NOT** try to disassemble, repair or otherwise tamper with a battery pack. The battery pack will overheat and ignite. Leakage of caustic alkaline solution or other electrolytic substances will cause fire or injury, possibly resulting in death or serious injury.

3. **DO NOT** short-circuit the battery pack by contacting the terminals with a metal object. A short-circuit can cause fire, damage the battery pack, and possibly cause injury. To avoid accidental short-circuit, always wrap the battery pack in plastic and cover the terminals with electrical tape when storing or disposing of the battery pack.

4. **DO NOT** puncture the battery pack with a nail or other sharp object. Never strike it with a hammer or other object. Never step on it.

5. **DO NOT** try to charge the battery pack in any manner other than that described in this manual. Never connect the battery pack to a plug socket or to an automobile's cigarette lighter socket. It may rupture or ignite.

6. **DO NOT** use other battery pack aside from the battery pack included in your computer package, or those TOSHIBA recommended battery packs.
    Use of an improper battery could cause smoke, fire, or explosion of the battery pack.

7. **DO NOT** expose the battery pack to a heat source. Exposure to heat can cause the battery pack to ignite, explode or leak caustic liquid and cause death or serious injury. It could also fail or malfunction causing data loss.

8. **DO NOT** expose the battery pack to abnormal shock, vibration or pressure. The battery pack's internal protective device will fail, causing it to overheat, explode, ignite or leak caustic liquids possibly resulting in death or serious injury.

9. **DO NOT** let a battery pack to become wet. A wet battery pack will overheat, ignite or explode, possibly resulting in death or serious injury.

Warning

1. **DO NOT** allow caustic electrolyte fluid leakage from a battery pack to come in contact with your eyes, skin or clothing. If caustic electrolyte fluid accidentally gets in contact with your eyes, immediately wash your eyes with large amounts of running water and seek medical attention to help prevent eye damage. If electrolyte fluid should accidental come in contact with your skin, immediately wash it under running water to prevent rash. If it comes in contact with your clothes, promptly remove them to prevent the fluid from getting in contact with your skin or eyes.

2. Immediately turn off the power, disconnect the AC adapter and remove the battery if any of the following events are observed in the battery pack: offensive or unusual odor, excessive heat, discoloration or deformation.
   DO NOT use the computer again until it has been checked by a TOSHIBA service provider. It might generate smoke or fire, or the battery pack might explode.

3. Make sure the battery is securely installed in the computer before attempting to charge the battery pack. Improper installation could generate smoke or fire, or cause the battery pack to explode.

4. Keep the battery pack out of reach of infants and children.

Caution

1. **DO NOT** continue to use the battery pack af ter it has reached its maximum recharging capacity, or after the display of a warning message indicating that the battery pack's power is exhausted. Continued use of an exhausted or impaired battery pack could cause the loss of data.

2. **DO NOT** dispose battery packs with normal garbage. Bring them to your TOSHIBA dealer or to another recycling center to save resources and prevent environmental damage. Cover the terminals with electrical tape to prevent short-circuits, which could cause the battery pack to ignite or explode.

3. Use only the battery packs recommended by TOSHIBA as replacements.

4. Always make sure the battery pack is installed correctly and securely. Otherwise, the battery pack could fall out and possibly cause injury.

5. Charge the battery pack only in an ambient temperature between 5 and 30 degrees Celsius. Otherwise, the electrolyte solution might leak, battery pack performance might deteriorate and the battery life might be shortened.

6. Be sure to monitor the remaining battery power. If the battery pack or real time clock battery discharge completely, Sleep Mode will not function, data in memory will be lost, and the computer might register an incorrect time and date. In this case, connect the AC adapter to recharge the batteries.

7. **DO NOT** install or remove the battery pack without first turning off the power and disconnecting the AC adapter. **DO NOT** remove the battery pack while the computer is in Sleep Mode as data will be lost.

Note

1. **DO NOT** remove the battery pack while the Wake-up on LAN function is enabled as data will be lost. Disable the Wake-up on LAN function before you remove the battery pack.

2. To ensure the battery pack maintains maximum capacity, operate the computer on battery power once a week until the battery pack is fully discharged. Refer to the section *Extending battery life* in this chapter for procedures. If the computer is continuously operated on AC power for an extended period or for more than a week, the battery might fail to retain a charge. It might not function efficiently over the expected life of the battery pack and the Battery indicator might not indicate a low-battery condition.

3. After the battery pack is charged, avoid leaving the AC adapter connected and the computer turned off for more than a few hours at a time. Continuing to charge a fully charged battery pack can damage the battery.

Charging the batteries

When the power in the battery pack becomes low, the **Battery** indicator blinks amber indicating that the battery capacity is below 10%. If you continue to use the computer while the **Battery** indicator blinks, the computer enables Hibernation mode (so you do not lose data) and automatically turns off.

You must recharge a battery pack when it becomes discharged.

Procedures

To recharge a battery pack while it is installed in the computer, connect the AC adapter to the **DC IN** socket and plug the other end into a working outlet.

The **Battery** indicator glows amber when the battery is being charged.

Use only the computer connected to an AC power source to charge the battery pack. Do not attempt to charge the battery pack with any other charger.

Time

The following table shows the time required to fully charge a discharged battery.

Charging time (hours)

Battery type	Power on	Power off
Battery pack	about 12 or longer	about 4 or longer
RTC battery	about 24	about 24 with AC or Battery pack

The charging time when the computer is on is affected by ambient temperature, the temperature of the computer and how you use the computer.

If you make heavy use of external devices the battery might scarcely charge at all during operation. Refer also to the section Maximizing battery operating time.

Battery charging notice

The battery may not charge right away under the following conditions:

■ The battery is extremely hot or cold. To make sure the battery charges to its full capacity, charge the battery at room temperature of 10°C to 30°C (50°F to 86°F).

■ The battery is nearly completely discharged. Leave the AC adapter connected for a few minutes and the battery should begin charging.

Once a battery pack is fully charged, it is recommended that you operate the computer only on battery power until the battery pack completely discharges. Doing so extends battery life and helps ensure accurate monitoring of battery capacity.

The **Battery** indicator may show a rapid decrease in battery operating time when you try to charge a battery under the following conditions:

■ The battery has not been used for a long time.

■ The battery has completely discharged and been left in the computer for a long time.

■ A cool battery is installed in a warm computer.

In such case, follow the steps below.

1. Fully discharge the battery by leaving it in the computer with the power on until the power automatically shuts off.

2. Plug in the AC adapter.

3. Charge the battery until the Battery indicator glows green. Repeat these steps two or three times until the battery recovers normal capacity.

Leaving the AC adapter connected will shorten battery life. At least once a week, run the computer on battery power until the battery is fully discharged, then recharge the battery.

Monitoring battery capacity

Remaining battery power can be monitored using the following methods.

■ Clicking the battery icon on the task bar

■ Via the Battery Status in the Windows Mobility Center Window

■ *You should wait at least 16 seconds after turning on the computer before trying to monitor the remaining operating time. This is because the computer needs this time to check the battery's remaining capacity and then calculate the remaining operating time, based on this together with the current power consumption.*

■ *The actual remaining operation time may differ slightly from the calculated time.*

With repeated discharges and recharges, the battery's capacity will gradually decrease. Even when an often-used/old battery and a new battery are both fully charged, they would not have the same battery capacity.

Maximizing battery operating time

A battery's usefulness depends on how long it can supply power on a single charge.

How long the charge lasts in a battery depends on:

■ How you configure the computer such as whether you enable battery power saving options. The computer provides a battery save mode to conserve battery power. This mode has the following options:

■ Display auto off

■ Hard Disk Drive auto off

■ System auto off

■ LCD brightness

■ How often and how long you use the hard disk, optical media drive and the disk drive (if one is connected).

■ How much charge the battery contained to begin with.

■ How you use optional devices, such as a PC Card, to which the battery supplies power.

■ Enabling Sleep Mode or Hibernation Mode conserves battery power if you are frequently turning the computer off and on.

■ Where you store your programs and data.

■ Closing the display when you are not using the keyboard saves power.

■ Operating time decreases at low temperatures.

■ The condition of the battery terminals. Make sure the battery terminals stay clean by wiping them with a clean dry cloth before installing the battery pack.

Retaining data with power off (sleep mode)

When you turn off your computer with fully charged batteries, the batteries retain data/charge for the following approximate time periods:

Battery	Approximately 2.0 days (Sleep mode, 6-cell)
	Approximately 1.5 month (Shutdown mode, 6-cell)
RTC battery	Approximately 3 months

Extending battery life

To maximize the life of your battery pack:

■ If you have extra battery packs, rotate their use.

■ If you will not be using the system for an extended period, remove the battery pack.

■ Store spare battery packs in a cool dry place out of direct sunlight.

Replacing the battery pack

When the battery pack reaches the end of its operating life you will need to install a new one. If the **Battery** indicator flashes amber shortly after the battery has been fully recharged, the battery pack needs to be replaced.

You might also replace a discharged battery pack with a charged spare when you are operating your computer away from an AC power source. This section explains how to remove and install the battery pack.

Removing the battery pack

To replace a discharged battery pack, follow the steps below.

■ *When handling battery packs, be careful not to short circuit the terminals. Also do not drop, hit or otherwise apply impact; do not scratch or break the casing and do not twist or bend the battery pack.*

■ *Do not remove the battery pack while the computer is in Sleep Mode as data in memory will be lost.*

1. Save your work.
2. Turn the computer's power off. Make sure the Power indicator is off.
3. Remove all cables connected to the computer.
4. Turn the computer upside down.

5. Unlock the Battery Pack Lock.
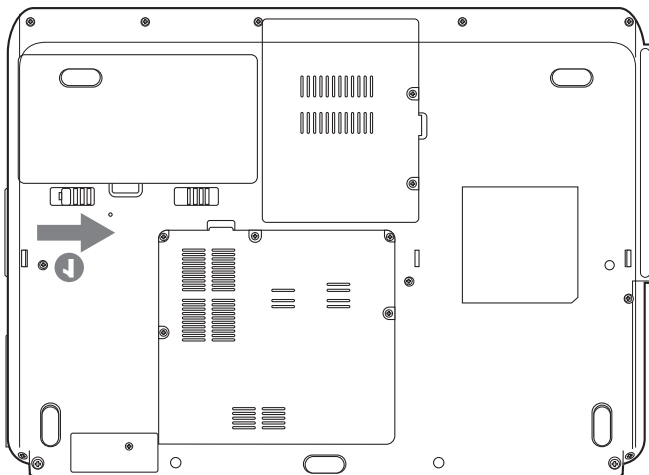
6. Slide the battery pack latch to the left, then pull the battery out of the battery bay.
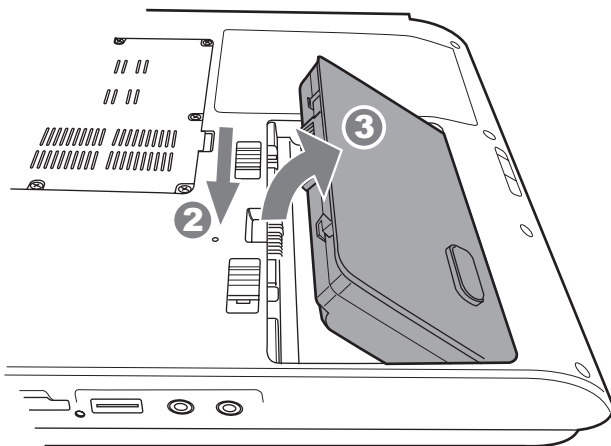
Installing the battery pack

To install a battery pack, follow the steps below.

> ⚠️ *The battery pack is a lithium ion battery, which can explode if not properly replaced, used, handled or disposed of. Dispose of the battery as required by local ordinances or regulations. Use only batteries recommended by TOSHIBA as replacements.*

1. Turn the computer's power off.
2. Disconnect all cables connected to the computer.
3. Hold the battery pack so that the label faces down and the connectors on the battery face the connectors on the computer.
4. Put the battery into the battery bay until the latch clicks into place.
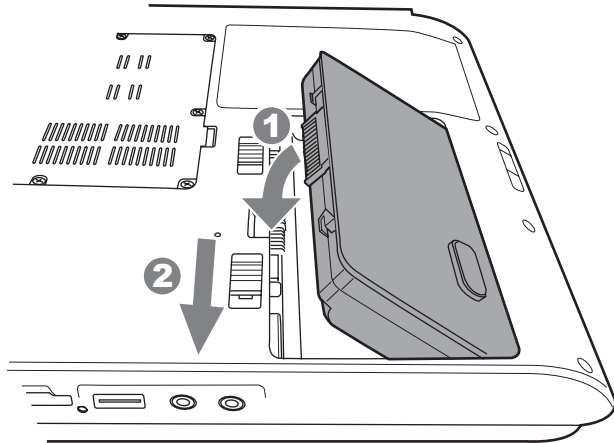
Power-up modes

The computer has three power-up modes:

- Hibernation (saves data in memory to the hard disk)
- Sleep (power remains on, maintaining the data in memory, but the CPU and all other devices effectively enter a 'sleep' mode)
- Boot (does not save data in memory)

> ℹ️ *Refer also to the section Turning off the power in Chapter 3, Getting Started.*

Panel power off/on

This feature makes the computer to enter Hibernation when the display panel is closed and turns it back on when the display panel is opened.

If the panel power off function is enabled and you use Shut down Windows, do not close the display until the shut down function is completed.

System automatic Sleep/Hibernation

This feature automatically turns off the system in Sleep or Hibernation mode if the computer is not used for a set duration.

Refer to *Special features*, in Chapter 1, *L40 Series Features* for an explanation of how to set the duration.

Chapter 7

Optional Devices

Optional devices can expand the computer's capabilities and its versatility. This chapter describes connection or installation of the following types of devices, which are available from your TOSHIBA dealer:

Cards/Memory

■ Express Card
■ SD/SDHC/MMC/MS/MS Pro/xD memory card
■ Memory expansion

Power devices

■ Additional battery pack
■ Additional AC adapter

Peripheral devices

■ External monitor
■ Security lock

Express Card

Installing an Express Card

The Express Card slot is located on the left side of the computer. You can install one Express Card in the slot.

Windows' hot-install feature lets you install Express Card while the computer's power is on.

To install an Express Card, follow the steps below.

> *Do not install an Express Card while the computer is in sleep or hibernation mode. Some cards might not work properly.*

1. Insert the Express Card.
2. Press gently to ensure a firm connection.

3. Check the configuration in the HW Setup window to make sure it is appropriate for your card.
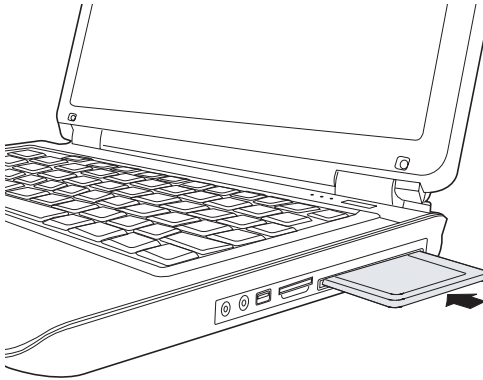
Removing an Express Card

To remove the Express Card, follow the steps below.

1. In Windows Vista®, open the Safely Remove Hardware icon on the system tray and disable the Express Card.
2. Press the Express Card slightly to make it stretch out.
3. Grasp the Express Card and pull it out from the slot.
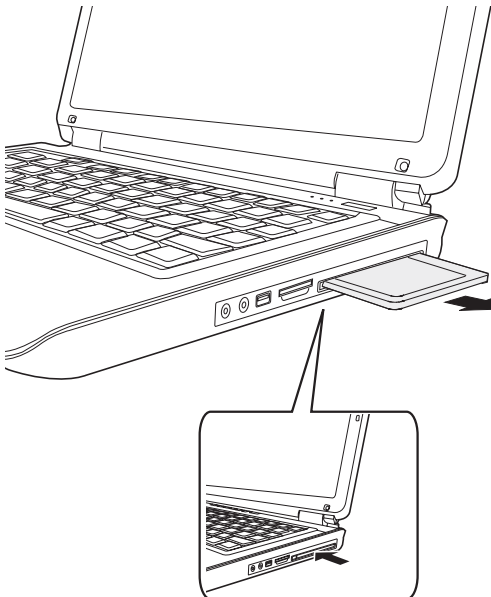
SD/SDHC/MMC/MS/MS Pro/xD Memory card

The computer is equipped with a multiple digital media card slot that can accommodate SD/SDHC/MMC/MS/MS Pro/xD memory cards. These memory cards let you easily transfer data from devices, such as digital cameras and Personal Digital Assistants, which use flash-memory.

Card Type	Capacities
SD	8MB to 2GB
SDHC	4GB to 8GB
MMC	8MB to 2GB
MS	8MB to 256MB
MS Pro	256MB to 2GB
xD	16MB to 2GB

Keep foreign objects out of the memory card slot. A pin or similar object can damage the computer's circuitry.

Do not format a memory card with Windows as this will make the memory card unusable.

The Logo of SD memory card is .

The Logo of SDHC memory card is .

■ *Memory Stick Duo/PRO Duo and the Memory Stick adapter are not compatible with the Multiple Digital Media Card Slot. Do not insert Memory Stick Duo/PRO Duo into the slot. Data may be lost or damaged if you use any card other than those supported.*

■ *The card is designed so that it can be inserted in only one way. Do not try to force the card into the slot.*

■ *For more details on using memory cards, see manuals accompanying the cards.*

Installing a memory card

To install a memory card:

1. Insert the memory card.
2. Press gently to ensure a firm connection.
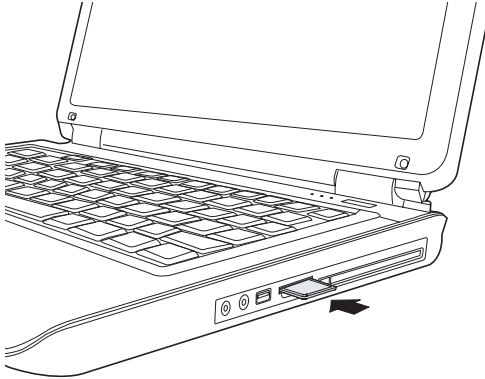
> ⚠ *Be sure the memory card is oriented properly before you insert it. If Windows fails to read the card, remove then reinsert it.*

> ℹ *The multiple digital media card slot only accepts one type of card at a time. Do not attempt to install more than one card as you risk damaging either the cards themselves or the computer.*

Removing a memory card

To remove a memory card, follow the steps below:

1. Click the Safely Remove Hardware icon on the Taskbar.
2. Select a device, then click the Stop button. A confirmation dialog may appear, depending on how the device is registered with the system; if so, confirm that you want to remove the device.
3. Gently press the memory card inside the socket to eject it.

4. Grasp the card and remove it.
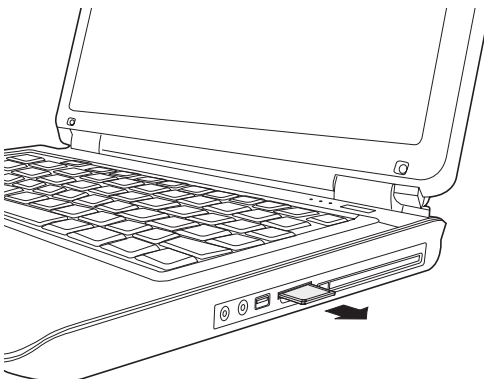
■ *Make sure the memory card indicator is out before you remove the card or turn off the computer's power. If you remove the card or turn off the power while the computer is accessing the card you may lose data or damage the card.*

■ *Do not remove the card while the computer is in Sleep or Hibernation mode. The computer could become unstable or data in the memory card could be lost.*

■ *Do not turn off or place the computer into either Sleep Mode or Hibernation Mode while data is being transferred to or from the memory card. The system may become unstable or data in the memory card may be lost.*

Memory card care

Set the write-protect switch to the lock position, if you do not want to record data.

1. Do not write to a memory card if the battery power is low. Low power could affect writing accuracy.
2. Do not remove a memory card while read/write is in progress.
3. The memory card is designed so that it can be inserted only one way. Do not try to force the card into the slot.
4. Do not leave a memory card partially inserted in the slot. Press the memory card until you hear it click into place.
5. Do not twist or bend memory cards.
6. Do not expose memory cards to liquids or store in humid areas or lay media close to containers of liquid.
7. After using a memory card, return it to its case.
8. Do not touch the metal part or expose it to liquids or let it get dirty.

Memory expansion

You can install additional memory module in the computer's main or second memory module socket to increase the amount of memory. This section describes how to install and remove a memory module.

■ *Before you install or remove a memory module, turn off the computer with the Shut Down option in the Windows Start menu. If you install or remove a memory module while the computer is in Sleep or Hibernation mode, data will be lost.*

■ *Some memory modules can be physically installed but are not compatible with the computer. In this case the computer will issue a warning.*

CAUTION: *If you want to upgrade system memory, you should only use certified modules. Ask your vendor or check the TOSHIBA web site for a list of approved memory products.*

Insert the two memory modules of the same specifications and capacity into Slot A and Slot B respectively. The computer will operate in dual channel mode.

You can access the inserted memory modules efficiently in dual channel.

Additional battery pack

You can increase the portability of the computer with additional battery packs. If you are away from an AC power source and your battery runs low,you can replace it with a freshly charged battery. See Chapter 6: *Power and Power-Up Modes*.

Additional AC adapter

If you frequently carry the computer to different sites such as your home and office, having an AC adapter at each location reduces the weight and bulk of your load.

External monitor

An external analog monitor can be connected to the external monitor port on the computer.

To connect a monitor, follow the steps below.

1. Turn the computer off.
2. Connect the monitor to the external monitor port.
3. Turn the monitor's power on.
4. Turn the computer on.

When you turn on the power, the computer automatically recognizes the monitor.

To change the display settings, press **Fn** + **F5**. If you disconnect the monitor before you turn the computer off, be sure to press **Fn** + **F5** to switch to the internal display. Refer to Chapter 5: *The Keyboard* for details on using hot keys to change the display setting.

Chapter 8

Troubleshooting

TOSHIBA designed the computer for durability. However, should problems occur, following the procedures in this chapter can help you to determine the cause.

Problem solving process

■ Stop immediately when you recognize that a problem exists. Further action may result in data loss or damage. You may destroy valuable problem related information that can help solve the problem.

■ Observe what is happening. Write down what the system is doing and what actions you performed immediately before the problem occurred.If you have a printer attached, print a copy of the screen using PrtSc.

■ Isolate the problem. Using the tools available to you, such as the troubleshooting tips in this chapter, try to discover the specific actions that caused the problem.

The questions and procedures offered in this chapter are meant as a guide, they are not definitive problem solving techniques. Many problems can be solved simply, but a few may require help from your dealer or a service center. If you find you need to consult your dealer or others, be prepared to describe the problem in as much detail as possible.

Preliminary checklist

Consider the simplest solution first. The items in this checklist are easy to fix and yet can cause what appears to be a serious problem.

■ Make sure you turn on all peripheral devices before you turn on the computer. This includes your printer and any other external device you are using.

■ Before you attach an external device, turn the computer off. When you turn the computer back on it recognizes the new device.

■ Make sure all options are set properly in the setup program.

■ Check all cables. Are they correctly and firmly attached? Loose cables can cause signal errors.

■ Inspect all connecting cables for loose wires and all connectors for loose pins.

■ Check that the optical disc drive is correctly inserted. Make notes of your observations and keep them in a permanent error log. This will help you describe your problems to your dealer. If a problem recurs, the log will help you identify the problem faster.

Analyzing the problem

Sometimes the system gives clues that can help you identify why it is malfunctioning. Keep the following questions in mind:

■ Which part of the system is not operating properly: keyboard, disk drives, hard disk drive, printer, display. Each device produces different symptoms.

■ Is the operating system configuration set properly? Check the configuration options.

■ What appears on the display screen? Does it display any messages or random characters? Print a copy of the screen if you have a printer attached. Look up the messages in the software and operating system documentation. Check that all connecting cables are correctly and firmly attached. Loose cables can cause erroneous or intermittent signals.

■ Does any indicators light up? Which ones? What color are they? Do they stay on or blink? Write down what you see.

■ Do you hear any beeps? How many? Are they long or short? Are they high pitched or low? Is the computer making any unusual noises? Write down what you hear.

Record your observations so you can describe them to your dealer.

Software	The problems may be caused by your software. If you cannot load a software package, the media may be damaged or the program might be corrupted. Try loading another copy of the software.
	If an error message appears while you are using a software package, check the software documentation. These documents usually include a troubleshooting section or a summary of error messages.
	Next, check any error messages in the operating system documentation.
Hardware	If you cannot find a software problem, check your hardware. First run through the items in the preliminary checklist above. If you still cannot correct the problem, try to identify the source. The next section provides checklists for individual components and peripherals.

Hardware and system checklist

This section discusses problems caused by your computer's hardware or attached peripherals. Basic problems may occur in the following areas:

- System start-up
- Self test
- Power
- Battery
- Keyboard
- LCD panel
- Hard disk drive
- PC/ Express Card
- Monitor
- Pointing Device
- DVD Super Multi drive with double layer disc recording support
- USB
- LAN
- Sleep/Hibernation
- Memory expansion
- Modem
- CD-RW/DVD-ROM drive
- Disk drive
- Real Time Clock
- Sound system

System start-up

When the computer does not start properly, check the following items:

- Self Test
- Power Sources
- Power-on Password

Self test

When the computer starts up, the self test will be run automatically, and the following will be displayed:
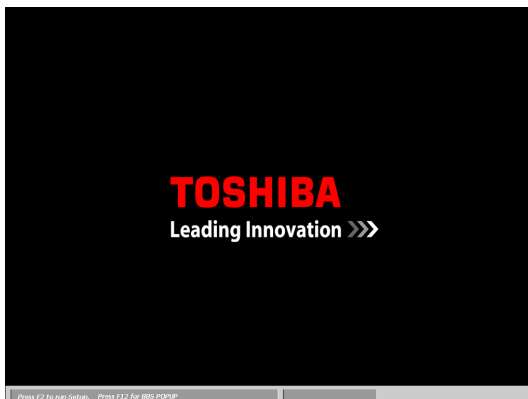
This screen image is one of the examples. You may see different screen image(s) depending on your purchased model.

This message remains on the screen for a few seconds.

If the self test is successful, the computer tries to load the operating system based around how the Boot Priority option is set within the computer's BIOS setup.

If any of the following conditions are present, the self test failed:

■ The computer stops and does not proceed to display information or messages except the TOSHIBA logo.

■ Random characters appear on the screen, and the system does not function normally.

■ The screen displays an error message.

Turn off the computer and check all cable connections as well as PC Card and memory module connections. If the test fails again, contact your dealer.

Power

When the computer is not plugged into an AC outlet, the battery pack is the primary power source. However, your computer has a number of other power resources, including an intelligent power supply and Real Time Clock battery. These resources are interrelated and any one could affect apparent power problems. This section provides check lists for AC power and the battery. If you cannot resolve a problem after following them, the cause could lie with another power resource. In such cases you should contact your dealer.

Overheating power down

If the computer's internal temperature becomes too high, the computer will automatically shut down.

AC power

If you have trouble turning on the computer with the AC adapter connected, check the **DC IN** indicator.

Problem	Procedure
AC adapter does not power the computer (DC IN indicator does not glow blue).	Check the connections. Make sure the cord is firmly connected to the computer and a power outlet.
	Check the condition of the cord and terminals. If the cord is frayed or damaged, replace it. If the terminals are soiled, wipe them with cotton or a clean cloth.
	If the AC adapter still does not power the computer, contact your dealer.

Keyboard

Keyboard problems can be caused by your setup configuration.

Problem	Procedure
Some letter keys produce numbers.	Check that the numeric keypad overlay is not selected. Press **Fn** + **F11** and try typing again.
Output to screen is garbled.	Make sure the software you are using is not remapping the keyboard. Remapping involves reassigning the meaning of each key. See your software's documentation.
	If you are still unable to use the keyboard, consult your dealer.

Battery

If you suspect a problem with the battery, check the **DC IN** indicator as well as the indicators for the battery.

Problem	Procedure
Battery does not power the computer.	The battery may be discharged. Connect the AC power cord to charge the battery.
Battery does not charge when the AC power cord is attached. (**Battery** indicator does not glow amber.)	If the battery is completely discharged, it will not begin charging at once. Wait a few minutes.
	If the battery still does not charge, make sure the outlet is supplying power. Plug in an appliance and see if it works. If it does not, try another power source.
	Check whether the battery is hot or cold. If the battery is too hot or too cold, it will not charge properly. Let it reach room temperature.
	Unplug the AC adapter and remove the battery to make sure the terminals are clean. If necessary wipe them with a soft dry cloth dipped in alcohol.
	Connect the AC adapter and replace the battery.
	Check the **Battery** indicator. If it does not glow, let the computer charge the battery for at least 20 minutes. If the **Battery** indicator glows after 20 minutes, let the battery continue to charge for at least another 20 minutes before turning on the computer.
	If the indicator still does not glow, the battery may be at the end of its operating life.
	Replace it.
	If you do not think the battery is at the end of its operating life, see your dealer.

Problem	Procedure
Battery does not power the computer as long as expected.	Check the power consumption settings in the Power Options. Consider using a power saving mode.

Hard disk drive

Problem	Procedure
Computer does not boot from hard drive.	Insert a system disk and reboot.
	There may be a problem with your operating system files. Refer to your operating system documentation.
Slow performance	Your files may be fragmented. Run SCANDISK and defragmenter to check the condition of your files and disk.Refer to your operating system documentation or online HELP for information on running SCANDISK and the defragmenter.
	Contact your dealer if the problems continue.

LCD panel

Problem	Procedure
Lines appear broken.	Check if you are in DOS mode. In DOS, lines may appear broken, because of the LCD screen's higher resolution. The Windows display should appear normal.
No display.	Press the Hotkey **Fn** + **F5** to change the display priority and ensure it is not set for an external monitor.
	Make sure instant security was not activated. Try entering your password, if you have one registered. Or, turn the power off and back on to clear instant security.
Problems above remain unresolved or other problems occur.	Refer to your software's documentation to determine if the software is causing the difficulty.
	Contact your dealer if the problems continue.

Wireless LAN

If the following procedures do not restore LAN access, consult your LAN administrator.

Problem	Procedure
Cannot access Wireless LAN	Make sure the computer's wireless communication switch is set to on.
	Use the Config Free program that comes preinstalled in your computer to see LAN status.
	If the problem persists, consult your LAN administrator.

PC Card

Problem	Procedure
PC Card error occurs	Reset the PC Card to make sure it is firmly connected.
	Make sure the connection between the external device and the card is firm.
	Check the card's documentation.

Monitor

Refer also to Chapter 7, *Optional Devices* and to your monitor's documentation.

Problem	Procedure
Monitor does not turn on	Make sure that the external monitor's power switch is on. Confirm that the external monitor's power cable is plugged into a working power outlet.
No display	Try adjusting the contrast and brightness controls on the external monitor.
	Press hotkeys **Fn** + **F5** to change the display priority and make sure it is not set for the internal display.
Display error occurs	Check that the cable connecting the external monitor to the computer is attached firmly.
	If problems persist, contact your dealer.
Monitor goes into panning mode	Check your monitor specification. It might not support the selected resolution and refresh rate.
	The resolution on the monitor might go into panning mode when wide screen resolution is selected.

Sound system

Problem	Procedure
No sound is heard	Adjust the volume control dial.
	Check the software volume settings.
	If appropriate, make sure the headphone connection is secure. Check Windows Device Manager and ensure the sound function is enabled and that settings for I/O address, interrupt level and DMA are correct for your software and do not conflict with other hardware devices that you have connected to the computer.

Pointing device

TouchPad

Problem	Procedure
On-screen pointer does not respond to Pad operation	The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it. You may also press **Fn** + **F9** to enable the TouchPad and then try again to move it.
Double-tapping does not work	Try changing the double-click speed setting in the mouse control utility.
	1. Open the **Control Panel**, select the **Mouse** icon and press **Enter**.
	2. Click the **Buttons** tab.
	3. Set the double-click speed as instructed and click **OK**.
The mouse pointer moves too fast or too slow	Try changing the speed setting in the mouse control utility.
	1. Open the **Control Panel**, select the **Mouse** icon and press **Enter**.
	2. Click the **Pointer Options** tab.
	3. Set the speed as instructed and click **OK**.

USB

Refer also to your USB device's documentation.

Problem	Procedure
USB device does not work	Check for a firm cable connection between the USB ports on the computer and the USB device. Make sure the USB device drivers are properly installed. Refer to your Windows documentation for information on checking the drivers.
	If problems persist, contact your dealer.

USB mouse

Problem	Procedure
On-screen pointer does not respond to mouse movement	The system might be busy. If the pointer is shaped as an hourglass, wait for it to resume its normal shape and try again to move it.
	Make sure the mouse is properly connected to the USB port.
Double-clicking does not work	Try changing the double-click speed setting in the mouse control utility.
	1. Open the **Control Panel**, select the Mouse icon and press **Enter**.
	2. Click the **Buttons** tab.
	3. Set the double-click speed as instructed and click **OK**.
The mouse pointer moves too fast or too slow	Try changing the speed setting in the mouse control utility.
	1. Open the **Control Panel**, select the **Mouse** icon and press **Enter**.
	2. Click the **Pointer Options** tab.
	3. Set the speed as instructed and click **OK**.
The mouse pointer moves erratically	The mouse might be dirty. Refer to your mouse documentations for instructions on cleaning.

Memory expansion

Problem	Procedure
The computer hangs up and issues beep sounds. (A long beep, three short beeps, three short beeps, and then a long beep.)	Make sure the memory module installed in the expansion slot is compatible with the computer. If an incompatible module has been installed, follow the steps below. 1. Turn off the power. 2. Disconnect the AC adapter and all peripheral devices. 3. Remove the battery pack. 4. Remove the memory module. 5. Replace the battery pack and/or connect the AC adapter. 6. Turn on the power.

Sleep/Hibernation

Problem	Procedure
The system will not enter Sleep/Hibernation	Is Windows Media Player open? The system might not enter Sleep/Hibernation, if Windows Media Player is either playing a selection or finished playing a selection. Close Windows Media Player before you select Sleep/Hibernation.

Modem

Problem	Procedure
Communication software can't initialize the modem	Make sure the computer's internal modem settings are correct. Refer to Phone and Modem Options Properties in the Control Panel.
You can hear a dial tone but can't make a call	If the call is going through a PBX machine, make sure the communication application's tone dial detection feature is disabled.
You place a call, but a connection can't be made	Make sure the settings are correct in your communications application.
After making a call you can't hear a ring	Make sure the tone or pulse selection in your communications application is set correctly.
Communication is cut-off unexpectedly	The computer will automatically cut-off communication when connection with the carrier is not successful for a set time interval. Try lengthening this time interval.

Problem	Procedure
A **CONNECT** display is quickly replaced by **NO CARRIER**	Check the error control setting in your communications application.
Character display becomes garbled during a communication	In data transmission, make sure the parity bit and stop bit settings correspond with those of the remote computer.
	Check the flow control and communication protocol.
You cannot receive an incoming call	Check the "rings before auto answer" setting in your communications application.

CD-RW/DVD-ROM drive

Problem	Procedure
You cannot access a disc in the drive	Make sure the drive's drawer is securely closed. Press gently until it clicks into place.
	Open the drawer and make sure the disc is properly seated. It should lie flat with the label facing up.
	A foreign object in the drawer could block laser light from reading the disc. Make sure there is no obstruction. Remove any foreign object.
	Check whether the disc is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner.
Some discs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the disc's documentation.
	Check the type of disc you are using. The drive supports:
	DVD-ROM: DVD-ROM, DVD-Video
	CD-ROM: CD-DA, CD-Text, Photo CD™ (single/multi-session), CD-ROMMode 1, Mode 2, CD-ROM XAMode 2 (Form1, Form2), Enhanced CD (CD-EXTRA), CD-G (Audio CD only)
	Recordable: CD-R, CD-RW
	Check the region code on the DVD. It must match that on the CD-RW/DVD-ROM drive.

Problem	Procedure
Cannot write correctly	If you have trouble writing, make sure you are observing the following precautions: ■ Use only media recommended by TOSHIBA. ■ Do not use the mouse or keyboard during writing. ■ Use only the software supplied with the computer for recording. ■ Do not run or start other software during writing. ■ Do not jar the computer during writing. ■ Do not connect/ disconnect external devices or install/remove internal cards during writing.

DVD Super Multi drive with double layer disc recording support

Problem	Procedure
You cannot access a disc in the drive	Make sure the drive's drawer is securely closed. Press gently until it clicks into place.
	Open the drawer and make sure the disc is properly seated. It should lie flat with the label facing up.
	A foreign object in the drawer could block laser light from reading the disc. Make sure there is no obstruction. Remove any foreign object.
	Check whether the disc is dirty. If it is, wipe it with a clean cloth dipped in water or a neutral cleaner.

Problem	Procedure
Some discs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration matches your software's needs. Check the disc's documentation.
	Check the type of disc you are using. The drive supports:
	DVD-ROM: DVD-ROM, DVD-Video, DVD-R, DVD-RW, DVD+R, DVD+RW, DVDRAM, DVD+R (Double Layer), DVD-R (dual Layer)
	CD-ROM: CD-DA, CD-Text, Photo CD (single/multi-session), CD-ROMMode 1, Mode 2, CD-ROM XAMode 2 (Form1, Form2), Enhanced CD (CD-EXTRA), CD-G (Audio CD only)
	Recordable: CD-R, CD-RW, DVD-R, DVD-R (Double Layer), DVD+R, DVD+R (Double Layer), DVD-RW, DVD+RW, DVD-RAM
	Check the region code on the DVD. It must match that on the DVD Super Multi drive.
Cannot write correctly	If you have trouble writing, make sure you are observing the following precautions:
	■ Use only media recommended by TOSHIBA.
	■ Do not use the mouse or keyboard during writing.
	■ Use only the software supplied with the computer for recording.
	■ Do not run or start other software during writing.
	■ Do not jar the computer during writing.
	■ Do not connect/ disconnect external devices or install/remove internal cards during writing.

Disk drive

Problem	Procedure
Some programs run correctly, but others do not	The software or hardware configuration may be causing a problem. Make sure the hardware configuration match's your software's needs.
You cannot access the disk drive	Try another disk. If you can access this disk, the original disk (not the disk drive) is problem.

Real Time Clock

Problem	Procedure
The following message is displayed on the LCD: **RTC battery is low or CMOS checksum is inconsistent. Press [F2] key to set Date/ Time.**	The RTC battery charge has become exhausted, you should set the date and time in within the BIOS setup screen through the following steps: 1. Press **[F1]** key. BIOS setup will boot up. 2. Press **[F2]** to set the date in [System Date]. 3. Press **[F2]** to set the time in [System Time].

TOSHIBA support

If you require any additional help using your computer or if you are having problems operating it, you may need to contact TOSHIBA for additional technical assistance.

Before you call

Some problems you experience may be related to software or the operating system, it is important to investigate other sources of assistance first. Before contacting TOSHIBA, try the following:

■ Review troubleshooting sections in the documentation for software and peripheral devices.

■ If a problem occurs when you are running software applications, consult the software documentation for troubleshooting suggestions. Call the software company's technical support for assistance.

■ Consult the dealer you purchased your computer and/or software from. They are your best sources for current information and support.

Where to write

If you are still unable to solve the problem and suspect that it is hardware related, write to TOSHIBA at the location listed in the accompanying warranty booklet or visit *http://www.toshiba-europe.com* on the Internet.

Chapter 9

Disclaimers

This chapter states the Disclaimer(s) information applicable to TOSHIBA computers.

CPU

Central Processing Unit ("CPU") Performance Disclaimer.

CPU performance in your computer product may vary from specifications under the following conditions:

■ use of certain external peripheral products

■ use of battery power instead of AC power

■ use of certain multimedia, computer generated graphics or video applications

■ use of standard telephone lines or low speed network connections

■ use of complex modeling software, such as high end computer aided design applications

■ use of several applications or functionalities simultaneously

■ use of computer in areas with low air pressure (high altitude >1,000 meters or >3,280 feet above sea level)

■ use of computer at temperatures outside the range of 5°C to 30°C (41°F to 86°F) or >25°C (77°F) at high altitude. All temperature references are approximate and may vary depending on the specific computer model. Refer to your PC documentation or visit the Toshiba website at *http://www.pcsupport.toshiba.com* for details.

CPU performance may also vary from specifications due to design configuration.

Under some conditions, your computer product may automatically shutdown. This is a normal protective feature designed to reduce the risk of lost data or damage to the product when used outside recommended conditions. To avoid risk of lost data, always make back-up copies of data by periodically storing it on an external storage medium. For optimum performance, use your computer product only under recommended conditions. Read additional restrictions in your product documentation. Contact Toshiba technical service and support, refer to *TOSHIBA support* section in Chapter 8, *Troubleshooting* for more information.

Memory (Main System)

Part of the main system memory may be used by the graphics system for graphics performance and therefore reduce the amount of main system memory available for other computing activities. The amount of main system memory allocated to support graphics may vary depending on the graphics system, applications utilized, system memory size and other factors. For PC's configured with 4GB of system memory, the full system memory space for computing activities will be considerably less and will vary bay model and system configuration.

Battery Life

Battery life may vary considerably depending on product model, configuration, applications, power management settings and features utilized, as well as the natural performance variations produced by the design of individual components. Published battery life numbers are achieved on select models and configurations tested by Toshiba at the time of publication. Recharge time varies depending on usage. Battery may not charge while computer is consuming full power.

After going through many charge and discharge cycles, the battery will lose its ability to perform at maximum capacity and will need to be replaced. This is a normal phenomenon for all batteries. To purchase a new battery pack, see the accessories information that is shipped with your computer.

HDD Drive Capacity

1 Gigabyte (GB) means 10^9 = 1,000,000,000 bytes using powers of 10. The computer operating system, however, reports storage capacity using powers of 2 for the definition of 1GB = 2^{30} = 1,073,741,824 bytes, and therefore shows less storage capacity. Available storage capacity will also be less if the product includes one or more pre-installed operating systems, such as Microsoft Operating System or pre-installed software applications, or media content. Actual formatted capacity may vary.

LCD

Over a period of time, and depending on the usage of the computer, the brightness of the LCD screen will deteriorate. This is an intrinsic characteristic of LCD technology.

Maximum brightness is only available when operating in AC power mode. The screen will dim when the computer is operated on battery power and you will not be able to increase the brightness of the screen.

Graphics Processor Unit ("GPU")

Graphics processor unit ("GPU") performance may vary depending on product model, design configuration, applications, power management settings and features utilized. GPU performance is only optimized when operating in AC power mode and may decrease considerably when operating in battery power mode.

Wireless LAN

The transmission speed over the wireless LAN and the distance over which wireless LAN can reach may vary depending on surrounding electromagnetic environment, obstacles, access point design and configuration, and client design and software/hardware configurations.

[54Mbps is the theoretical maximum speed under the IEEE802.11 (a/b/g) standard.] The actual transmission speed will be lower than the theoretical maximum speed.

Non-applicable Icons

Certain notebook chassis are designed to accommodate all possible configurations for an entire product series. Hence, be aware that your selected model may not have all the features and specifications corresponding to all of the icons or switches shown on the notebook chassis.

Copy Protection

Copy protection technology included in certain media may prevent or limit recording or viewing of the media.

Images

All images are simulated for purposes of illustration.
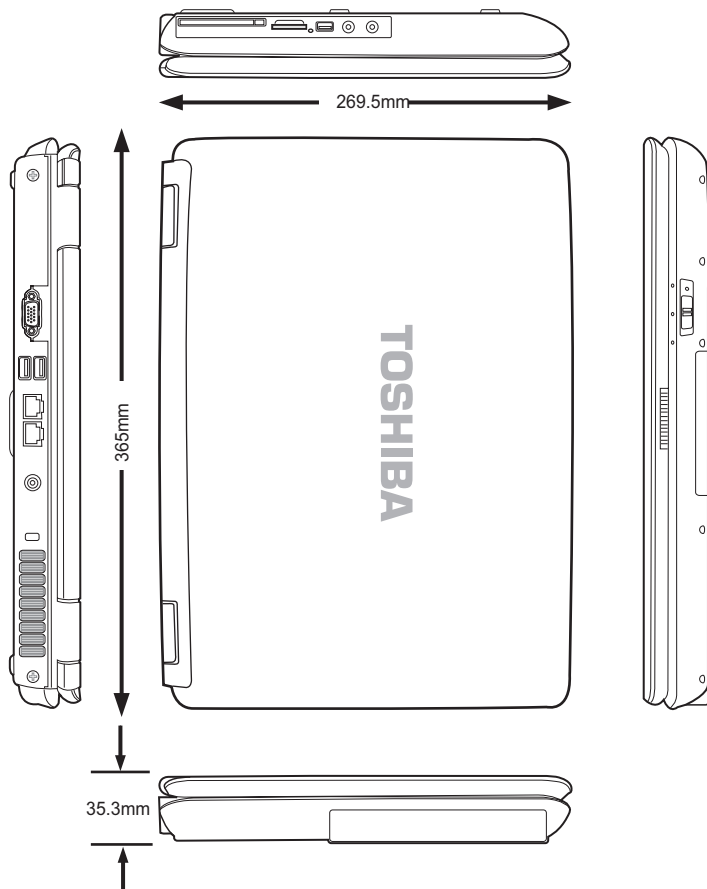
LCD Brightness and Eye Strain

Your LCD display has a brightness approaching that of a TV device. We recommend that you adjust the brightness of your LCD to a comfortable level to prevent possible strain on your eyes.

Appendix A

Specifications

This appendix contains the Notebook PC's technical specifications.

Dimensions

269.5mm

365mm

35.3mm

Weight

Starting at 2.86kg*

* Weight may vary depending on product configuration, vendor components, manufacturing variability and options selected.

Environmental Requirements

Characteristics	Specifications	
	Operating	Non-operating
Temperature	5°C to 35°C	-20°C to 65°C
Altitude (from sea level)	-30 to 10,000 feet	-30 to 40,000 feet
Humidity	20% to 80%	

Built-in Modem

Some computers in this series are equipped with Modem functionality.

Network control unit (NCU)		
Type of NCU	AA	
Type of line	Telephone line (analog only)	
Type of dialling	Pulse	
	Tone	
Control command	AT commands	
	EIA-578 commands	
Monitor function	Computer's speaker	
Communication specifications		
Communication System	Data:	Full duplex
	Fax:	Half duplex
Communication Protocol	Data:	
	ITU-T-Rec (Former CCITT)	V.21/V.22/V.22bis/ V.32/ V.32bis/V.34/ V.90/ V.92 (only for USA and Canada)
	Bell	103/212A
	Fax: ITU-T-Rec (Former CCITT)	V.17/V.29/V.27ter /V.21 ch2

Communication Speed	Data transmission and reception
	300/1200/2400/4800/7200/9600/12000/14400/ 16800/19200/21600/24000/26400/28800/ 31200/33600 bps
	Data reception only with V.90/V.92
	28000/29333/30666/32000/33333/34666/ 36000/37333/38666/40000/41333/42666/ 44000/45333/46666/48000/49333/50666/ 52000/53333/54666/56000 bps
	Fax:
	2400/4800/7200/9600/12000/14400 bps
Error correcting	MNP class 4 and ITU-T V.42
Data compression	MNP class 5 and ITU-T V.42bis

Appendix B

Display Modes

This appendix contains a table listing all the display modes when the display. is set to an external monitor.

If you are running some applications (for example a 3D application or video playback and so on), you may see some disturbance, flickering or frame dropping on your screen. If that occurs, adjust the resolution of display, lowering it until the screen is displayed properly. You could also disable Windows Aero™. to help correct this situation.

CRT Display Resolution	Color Depth (bpp)	Refresh Rate (Hz)
800 × 600	16 bpp	60, 75, 85, 100
	32 bpp	60, 75, 85, 100
1024 × 768	16 bpp	60, 75, 85, 100
	32 bpp	60, 75, 85, 100
1280 × 800	16 bpp	60
	32 bpp	60
1280 × 1024	16 bpp	60, 75, 85, 100
	32 bpp	60, 75, 85, 100
1600 × 1200	16 bpp	60, 75, 85, 100
	32 bpp	60, 75, 85, 100
1920 × 1440	16 bpp	60, 75
	32 bpp	60, 75
2048 × 1536	16 bpp	60
	32 bpp	60

Some display mode might not be supported depending on the external monitor which you use.

Appendix C

AC Power Cord and Connectors

The power cord's AC input plug must be compatible with the various international AC power outlets and the cord must meet the standards for the country/region in which it is used. All cords must meet the following specifications:

Length:	Minimum 1.7 meters
Wire size:	Minimum 0.75 mm^2
Current rating:	Minimum 2.5 amperes
Voltage rating:	125 or 250 VAC (depending on country/region's power standards)

Certification agencies

U.S. and Canada:	UL listed and CSA certified No. 18 AWG, Type SVT or SPT-2
Australia:	AS

Europe:

Austria:	OVE	**Italy:**	IMQ
Belgium:	CEBEC	**The Netherlands:**	KEMA
Denmark:	DEMKO	**Norway:**	NEMKO
Finland:	FIMKO	**Sweden:**	SEMKO
France:	LCIE	**Switzerland:**	SEV
Germany:	VDE	**United Kingdom:**	BSI

In Europe, two conductors power cord must be VDE type, H05VVH2-F or H03VVH2-F and for three conductors power cord must be VDE type, H05VV-F.

For the United States and Canada, two pin plug configuration must be a 2-15P (250V) or 1-15P (125V) and three pin plug coniguration must be 6-15P (250V) or 5-15P (125V) as designated in the U. S. National Electrical code handbook and the Canadian Electrical Code Part II.

The following illustrations show the plug shapes for the U. S. A. and Canada, the United Kingdom, Australia and Europe.
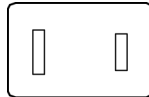
USA   United Kingdom
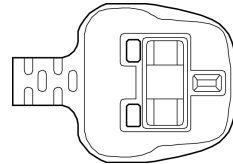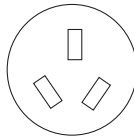
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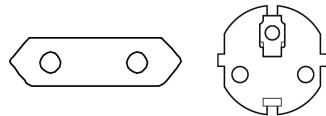
Canada
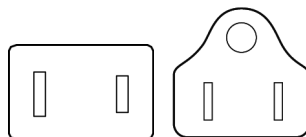
Appendix D

If your computer is stolen

Always take care of your computer and try to prevent it from being stolen. You are the owner of a valuable technical device, which may be highly attractive to thieves, so please do not leave it unattended in a public place. To further help protect against theft, security cables can be bought for use with your notebook when it is being used at home or in the office.

Make a note of your computer's machine type, model number, and serial number, and put it in a safe place. You will find this information on the underside of your notebook. Please also keep the receipt of the computer you purchased.

Should your computer be stolen, however, we'll help you try to find it. Before contacting TOSHIBA, please prepare the following information which is necessary to uniquely identify your computer:

■ In which country was your computer stolen?
■ What type of machine do you have?
■ What was the model number (PA number)?
■ What was the serial number (8 digits)?
■ When was it stolen, i.e. date?
■ What is your address, phone, and fax number?

To register the theft on paper, please follow these procedures:

■ Fill in the TOSHIBA Theft Registration form (or a copy of it) below.
■ Attach a copy of your receipt showing where your computer was purchased.
■ Either fax or send the receipt and registration form to the address below.

To register the theft online, please follow these procedures:

■ Visit *http://www.toshiba-europe.com* on the Internet. In the product area, choose **Computer Systems**.
■ In the Computer Systems page, open the **Support & Downloads** menu and choose the **Stolen Units Database** option.

Your entries are used to track your computer at our service points.

TOSHIBA Theft Registration

Send to: TOSHIBA Europe GmbH
Technical Service and Support
Leibnizstr. 2
93055 Regensburg
Germany

Fax number: +49 (0) 941 7807 921

Country stolen:

Machine type:
(e.g. L40 Series)

Model number:
(e.g. PSA30 YXT)

Serial number:
(e.g. 12345678G)

Date stolen: Year   Month   Day

Owner's details

Last name, first name:

Company:

Street:

Postal Code/City:

Country:

Phone:

Fax:

Glossary

The terms in this glossary cover topics related to this manual. Alternate naming is included for reference.

Abbreviations

AC: alternating current

AGP: accelerated graphics port

BIOS: basic input output system

CD-ROM: Compact Disc-Read Only Memory

CD-RW: Compact Disc-Read/Write

CMOS: complementary metal-oxide semiconductor

CPU: central processing unit

CRT: cathode ray tube

DC: direct current

DDC: display data channel

DMA: direct memory access

DOS: disk operating system

DVD: digital versatile disc

ECP: extended capabilities port

FDD: floppy disk drive

HDD: hard disk drive

IDE: integrated drive electronics

I/O: input/output

IRQ: interrupt request

KB: kilobyte

LCD: liquid crystal display

LED: light emitting diode

LSI: large scale integration

MS-DOS: Microsoft Disk Operating System

PCI: peripheral component interconnect

RAM: random access memory

ROM: read only memory

RTC: real time clock

SCSI: small computer system interface

TFT: thin-film transistor

USB: Universal Serial Bus

VESA: Video Electronic Standards Association

VGA: video graphics array

WXGA: wide extended graphics array

A

adaptor: A device that provides an interface between two dissimilar electronic devices. For example, the AC adaptor modifies the power from a wall outlet for use by the computer. This term also refers to the add-in circuit cards that control external devices, such as video monitors and magnetic tape devices.

application: A group of programs that together are used for a specific task such as accounting, financial planning, spreadsheets, word processing and games.

B

BIOS: Basic Input Output System. The firmware that controls data flow within the computer. *See also firmware.*

bit: Derived from "binary digit", the basic unit of information used by the computer. It is either zero or one. Eight bits is one byte. *See also byte.*

boot: Short for bootstrap. A program that starts or restarts the computer. The program reads instructions from a storage device into the computer's memory.

bps: Bits per second. Typically used to describe the data transmission speed of a modem.

buffer: The portion of the computer's memory where data is temporarily stored.Buffers often compensate for differences in the rate of flow from one device to another.

bus: An interface for transmission of signals, data or electric power.

byte: The representation of a single character. A sequence of eight bits treated as a single unit; also the smallest addressable unit within thesystem.

C

cache memory: High speed memory which stores data that increases processor speed and data transfer rate. When the CPU reads data from main memory, it stores a copy of this data in cache memory. The next time the CPU needs that same data, it looks for it in the cache memory rather than the main memory, which saves time. The computer has two cache levels. Level one is incorporated into the processor and level two resides in external memory.

capacity: The amount of data that can be stored on a magnetic storage device such as a floppy disk or hard disk. It is usually described in terms of kilobytes (KB), where one KB = 1024 bytes and megabytes (MB), where one MB = 1024 KB.

CardBus: An industry standard bus for 32-bit PC cards.

CD-ROM: A Compact Disc-Read Only Memory is a high capacity disc that can be read from but not written to. The CD-ROM drive uses a laser, rather than magnetic heads, to read data from the disc.

CD-R: A Compact Disc-Recordable disc can be written once and read many times. *See also CD-ROM.*

CD-RW: A Compact Disc-Read/Write disc can be rewritten many times. *See also CD-ROM.*

character: Any letter, number, punctuation mark, or symbol used by the computer. Also synonymous with byte.

chip: A small semiconductor containing computer logic and circuitry for processing, memory, input/output functions and controlling other chips.

CMOS: Complementary Metal-Oxide Semiconductor. An electronic circuit fabricated on a silicon wafer that requires very little power. Integrated circuits implemented in CMOS technology can be tightly packaged and are highly reliable.

compatibility: 1) The ability of one computer to accept and process data in the same manner as another computer without modifying the data or the media upon which it is being transferred.
2) the ability of one device to connect to or communicate with another system or component.

components: Elements or parts (of a system) which make up the whole (system).

configuration: The specific components in your system (such as the terminal, printer, and disk drives) and the settings that define how your system works. You use the HW Setup program to control your system configuration.

control keys: A key or sequence of keys you enter from the keyboard to initiate a particular function within a program.

controller: Built-in hardware and software that controls the functions of a specific internal or peripheral device (e.g. keyboard controller).

CPU: Central Processing Unit. The portion of the computer that interprets and executes instructions.

CRT: Cathode Ray Tube. A vacuum tube in which beams projected on a fluorescent screen-producing luminous spots. An example is the television set.

cursor: A small, blinking rectangle or line that indicates the current position on the display screen.

D

DC: Direct Current. Electric current that flows in one direction. This type of power is usually supplied by batteries.

default: The parameter value automatically selected by the system whenyou or the program do not provide instructions. Also called a preset value.

device driver: A program that controls communication between a specific peripheral device and the computer. The CONFIG.SYS file contains device drivers that MS-DOS loads when you turn the computer on.

dialog box: A window that accepts user input to make system settings or record other information.

disk drive: The device that randomly accesses information on a disk and copies it to the computer's memory. It also writes data from memory to the disk. To accomplish these tasks, the unit physically rotates the disk at high speed past a read-write head.

display: A CRT, LCD, or other image producing device used to view computer output.

DOS: Disk Operating System. *See also operating system.*

driver: A software program, generally part of the operating system, that controls a specific piece of hardware (frequently a peripheral device such as a printer or mouse).

DVD-RAM: A Digital Versatile Disc Random Access Memory is a highcapacity, high performance disc that lets you store large volumes of data. The DVD-ROM drive uses a laser to read data from the disc.

DVD-ROM: A Digital Versatile Disc Read Only Memory is a high capacity, high performance disc suitable for play back of video and other highdensity files. The DVD-ROM drive uses a laser to read data from the disc.

E

execute: To interpret and execute an instruction.

F

floppy disk: A removable disk that stores magnetically encoded data. floppy disk drive (FDD): An electromechanical device that reads and writes to floppy disks.

folder: An icon in Windows used to store documents or other folders.

format: The process of readying a blank disk for its first use. Formatting establishes the structure of the disk that the operating system expects before it writes files or programs onto the disk.

function keys: The keys labeled **F1** through **F12** that tell the computer to perform certain functions.

G

gigabyte (GB): A unit of data storage equal to 1024 megabytes. *See also megabyte.*

graphics: Drawings, pictures, or other images, such as charts or graphs, to present information.

H

hard disk: A non-removable disk usually referred to as drive C. The factory installs this disk and only a trained engineer can remove it for servicing. Also called fixed disk.

hard disk drive (HDD): An electromechanical device that reads and writes a hard disk. *See also hard disk.*

hertz: A unit of wave frequency that equals one cycle per second.

hot key: The computer's feature in which certain keys in combination with the extended function key, **Fn**, can be used to set system parameters, such as speaker volume.

I

input: The data or instructions you provide to a computer, communication device or other peripheral device from the keyboard or external or internal storage devices. The data sent (or output) by the sending computer is input for the receiving computer.

I/O: Input/output. Refers to acceptance and transfer of data to and from a computer.

I/O devices: Equipment used to communicate with the computer and transfer data to and from it.

J

jumper: A small clip or wire that allows you to change the hardware characteristics by electrically connecting two points of a circuit.

K

K: Taken from the Greek word kilo, meaning 1000; often used as equivalent to 1024, or 2 raised to the 10th power. *See also byte and kilobyte.*

KB: *See kilobyte.*

L

Light Emitting Diode (LED): A semiconductor device that emits light when a current is applied.

Liquid Crystal Display (LCD): Liquid crystal sealed between two sheets of glass coated with transparent conducting material. The viewingside coating is etched into character forming segments with leadsthat extend to the edge of the glass. Applying a voltage between the glass sheets alters the brightness of the liquid crystal.

LSI: Large Scale Integration. 1) A technology that allows the inclusion of up to 100,000 simple logic gates on a single chip.
2) An integrated circuit that uses large scale integration.

M

megabyte (MB): A unit of data storage equal to 1024 kilobytes. *See also kilobyte.*

mode: A method of operation, for example, the boot mode, Sleep mode or the hibernation mode.

modem: Derived from modulator/demodulator, a device that converts (modulates) digital data for transmission over telephone lines and then converts modulated data (demodulates) to digital format where received.

monitor: A device that uses rows and columns of pixels to display alphanumeric characters or graphic images. *See also CRT.*

MP3: An audio compression standard that enables high-quality transmission and real-time playback of sound files.

N

numeric keypad overlay: A feature that allows you to use certain keys on the keyboard to perform numeric entry, or to control cursor and page movement.

O

operating system: A group of programs that controls the basic operation of a computer. Operating system functions include interpreting programs, creating data files, and controlling the transmission and receipt (input/output) of data to and from memory and peripheral devices.

output: The results of a computer operation. Output commonly indicates data. 1) printed on paper, 2) displayed at a terminal, 3) sent through the serial port of internal modem, or 4) stored on some magnetic media.

P

parity: 1) The symmetrical relationship between two parameter values (integers) both of which are either on or off; odd or even; 0 or 1. 2) In serial communications, an error detection bit that is added to a group of data bits making the sum of the bits even or odd. Parity can be set to none, odd, or even.

peripheral device: An I/O device that is external to the central processor and/or main memory such as a printer or a mouse.

pixel: A picture element. The smallest dot that can be made on a display or printer. Also called a pel.

plug and play: A capability with Windows that enables the system to automatically recognize connections of external devices and make the necessary configurations in the computer.

port: The electrical connection through which the computer sends and receives data to and from devices or other computers.

prompt: A message the computer provides indicating it is ready for or requires information or an action from you.

R

Random Access Memory (RAM): High speed memory within the computercircuitry that can be read or written to.

restart: Resetting a computer without turning it off (also called "warm boot" or "soft reset"). *See also boot.*

RJ11: A modular telephone jack.

RJ45: A modular LAN jack.

ROM: Read Only Memory: A nonvolatile memory chip manufactured to contain information that controls the computer's basic operation. You cannot access or change information stored in ROM.

S

SCSI: Small Computer System Interface is an industry standard interface for connection of a variety of peripheral devices.

soft key: Key combinations that emulate keys on the IBM keyboard, change some configuration options, stop program execution, and access the numeric keypad overlay.

stop bit: One or more bits of a byte that follow the transmitted character or group codes in asynchronous serial communications.

system disk: A disk that has been formatted with an operating system. For MS-DOS the operating system is contained in two hidden files and the COMMAND.COM file. You can boot a computer using a system disk. Also called an operating system disk.

T

terminal: A typewriter-like keyboard and CRT display screen connected to the computer for data input/output.

TFT display: A liquid crystal display (LCD) made from an array of liquid crystal cells using active-matrix technology with thin film transistor (TFT) to drive each cell.

TouchPad: A pointing device integrated into the TOSHIBA computer palm rest.

U

Universal Serial Bus: This serial interface lets you communicate with several devices connected in a chain to a single port on the computer.

V

VGA: Video Graphics Array is an industry standard video adaptor that lets you run any popular software.

W

warm start: Restarting or resetting a computer without turning it off. write protection: A method for protecting a floppy disk from accidental erasure.